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China Report

AGRICULTURE

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CHINA REPORT
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NATIONAL

AGRICULTURE PROGRAM TO CENTURY'S END PUBLISHED

OW091110 Beijing XINHUA in English 1041 GMT 9 Nov 85

[Text] Beijing, November 9 (XINHUA)--China's total agricultural output value (including township industry) will reach 1,010 billion yuan at the turn of the century, quadrupling the 1980 figure.

That means the agricultural output value will grow 7.2 percent each year, reported a two-year program, "China by 2000," backed by the State Council and the Chinese Academy of Social Sciences.

Per capita income in the countryside will average 700 yuan and over 900 yuan in economically developed areas.

Grain output will average 415-429 kg per capita, edible oil and sugar, about six kg, meat, about 23 kg, eggs, about 10 kg, dairy products, 26 kg, and aquatic products, nine kg.

Corn, sweet potatoes, sorghum and barley will be mainly used as animal feed while rice, wheat and millet will account for more than 60 percent of food grains consumed by the Chinese people.

But, it is necessary to note that China's agriculture will still be vulnerable to natural disasters. Large areas of low-yield and dry farmland will also result in unstable output.

The irrational pricing system for grain, diminishing farmland and insufficient storage facilities could also affect grain production.

Grain crops will cover 74 percent of farmland and the rest will be planted with cotton, oil-bearing and other cash crops.

With intensive efforts to green the country, trees will cover 20 percent of the land and timber output will reach 100 million cubic meters.

China anticipates an annual meat output of 27.8-30 million tons, mostly coming from agricultural provinces rather than pastoral areas.

The research also expects rapid development in fisheries and rural industry.

It proposes that efforts be made to coordinate agricultural development with other sectors of the national economy, control population growth, improve soils to raise the fertility of farmland and protect the ecological balance.

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CSO: 4020/89

NATIONAL

STATE SURVEY REVEALS CHANGES IN CHINESE DIET

OW122155 Beijing XINHUA in English 1644 GMT 12 Nov 85

[Text] Beijing, November 12 (XINHUA)--While their consumption of grain has dipped since 1981, the urban Chinese are eating more fruit, meat, and aquatic and dairy products, according to a recent survey.

The survey by the State Statistical Bureau shows that monthly per capita consumption of grain, the mainstay of the Chinese diet, decreased 2.3 percent from 12.12 kg in 1981 to 11.82 kg last year in urban areas.

In the same year, the average urban family received a daily intake of 75 grams of protein, 65 grams of fat, and 2,400 large calories.

The nutritional intake of 87.8 percent of urban families has reached established international standards of maintaining normal health, according to the bureau.

Carbohydrates, protein and fat account for 63 percent, 11.6 percent and 25.4 of the daily calorie intake of urban families, respectively. This is close to the nutrition structure suggested by Chinese nutritionists, who have proposed a combination of 64.9 percent of carbohydrates, 12.8 percent of protein and 22.3 percent of fat.

As the dietary pattern of the Chinese people changes, Chinese nutritionists are calling attention to the possible increase of obesity, high blood pressure and cardiovascular disorders.

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CSO: 4020/89

NATIONAL

IMPROVING NUTRITION IN CHINA

Beijing NONGMIN RIBAO in Chinese 23 Sep 85 p 2

[Article by Diao Yan [0431 1484]: "How Can We Let Everyone Eat Better?--A Discussion on Improving Food Structures in China"]

[Excerpts] How can we let everyone eat a little better? Experts at the Chinese Academy of Sciences recently offered some opinions on improving the food structures of the people of China.

I. The Nutritional Situation of the Chinese People

Plant foods account for 94 percent of the foods consumed by the people of China. The proportion of animal foodstuffs is excessively low, only one-third the average world level. According to the Second National Nutrition Survey conducted in 1983, although China has absolute sufficiency in heat energy from food at the present time, the proportion of heat energy supplied by proteins is very low. There is an absolute insufficiency in protein and it is of poor quality (the proportion of food coming from animals is very low). The situation is even worse for the amount of fats. There also are inadequate amounts of minerals and vitamins. Only 71.11 percent of physical calcium needs can be satisfied, and the figure for infants and children is only 45.3 percent.

Improvements in the food structures of the Chinese people should be based on continuing the primacy of plant foodstuffs, gradually increasing the proportion of animal foods, improving the quality of foods and meeting all physical nutritional requirements.

Based on China's national conditions, Chinese nutritionists have called for two steps to improve food structures: increasing the proportion of animal foods to 11 to 15 percent by the year 1990, and to 18 to 25 percent by the year 2000.

II. How Can These Goals Be Achieved?

1. Focus on grain production: It has been estimated that per-capita grain consumption in China (including feed grains, etc.) should reach 764 to 814 jin by 1990 and 853 to 895 jin or more by the year 2000. To meet these indices, we must focus on grain production and guarantee grain output and quality.

2. Open up new sources of protein feeds: We must guarantee adequate supplies of proteins. One of the main reasons for the low level and poor quality (too high a proportion of animal fat) of individual livestock and poultry production in China at the present time is the low amount and poor quality of protein in feeds.

To guarantee the health and high output of pigs and poultry, their feed should contain about 20 percent plant dreg cakes. Only about 30 percent of the dreg cakes from legumes and oil crops in China now are being used for feed. Apart from expanding the area planted in legumes and other oil bearing crops, guaranteeing sufficient dreg cakes for feed requires the production of substantial non-protein nitrogen for use in feeds to conserve on the dreg cakes fed to cattle and sheep.

3. Establish a feed industry system. Besides establishing compound feed mills, we also should build plants to make vitamin, amino acid, mineral and trace element additives.

4. Develop fish and animal products with high returns to feed. Fish, chicken and rabbit meat and milk are rich in nutrition and easily digested and absorbed. Fish grow quickly and consume little feed. Dairy cattle, broilers and rabbits have a high feed utilization rate, so attention should be given to developing these animals.

12539/12899
CSO: 4007/41

NATIONAL

PRC PLANS 30,000 NEW FREE MARKETS FOR FOODSTUFFS

HK160626 Beijing CHINA DAILY in English 16 Nov 85 p 3

[Article by staff reporter Nie Lisheng]

[Text] Since free markets in China are becoming a chief source of vegetables and some other non-staple food for urban residents, the state plans to open between 20,000 and 30,000 more in the next five years to complete a national free-marketing system by 1990.

The plan is to open one market for every 30,000 to 50,000 residents in big and medium-sized cities and every 10,000 to 20,000 residents in small cities. Zhang Xingxiang, an official of State Industrial and Commercial Administration, told CHINA DAILY in a recent interview.

And for every district in these cities, he said, there will be one or two well-equipped fairs, which cover no less than 3,000 square metres and will be complete with shelters, stalls, warehouses, parking areas, water supply and drainage facilities.

The plan also envisages the establishment of several wholesale markets in each city for rural specialized households and collectives to bring in their agricultural and sideline produce in large quantities.

Local governments and private contributors will invest a total of 3 to 4 billion yuan in the project, which will make free markets available to residents of all cities.

According to Zheng, free markets have flourished since the beginning of this year after the state abolished its monopoly system for the purchase and distribution of farm and sideline produce and instituted price reforms to give more play to market regulation.

The number of free markets is expected to top 60,000 by the end of the year, compared with 56,500 in 1984, since the total business volume increased by 65 percent in the first six months of 1985 over the same period of last year.

In most cities, free markets have replaced state-run vegetable outlets to become the chief supplier of vegetables, poultry, eggs and aquatic products.

In Chongqing, Sichuan Province, for instance, 73 percent of these products were sold in free markets in third quarter, while in Shijiazhuang, Hebei Province, the free markets had a turnover of 170 percent more vegetable than state-run greeneries in the second quarter of the year.

However, a sample survey of 70 urban free markets throughout the country also showed that market prices of major products were rising. By the end of September, prices of 14 major foods rose an average of 35.6 percent over the same period of last year.

Prices of vegetables increased most sharply--an average of 65 percent--partly because vegetables at free markets were usually better because of timely delivery and intensive cultivation and partly because of the decline in vegetable production caused by severe droughts and floods.

Since state-run outlets handled a smaller volume of business, they have not been able to slow down the rising prices of vegetables through free competition, as they have been expected to do.

But compared with prices at state-run shops, the gap has been narrowed to a record low in history--only about 10 percent in many places. And some goods at free markets, such as fruits, were even priced lower than state prices, Zhang said.

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CSO: 4020/89

NATIONAL

QIAN ZHENGYING STRESSES WATER CONSERVANCY

OW091012 Beijing XINHUA in English 0949 GMT 9 Nov 85

[Text] Beijing, November 9 (XINHUA)--Minister of Water Resources and Electric Power Qian Zhengying Friday stressed the urgency of reinforcing water conservancy measures.

Speaking at a telephone conference, Qian said China's steady increase in grain output in recent years is a result of the contract responsibility system, which links rewards with output, as well as water conservancy projects.

Priority must be put on repairing and reinforcing facilities for water conservancy this coming winter and spring, Qian pointed out.

Strict supervision must be carried out to ensure the efficiency of the projects, she said.

She pointed out that some people have neglected farm capital construction facilities, many of which have been used for up to 30 years and are now aging or damaged.

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CSO: 4020/89

NATIONAL

RESULTS OF READJUSTMENT IN FARM MACHINE SYSTEM

Beijing ZHONGGUO NONGJIHUA BAO in Chinese 2 Sep 85 p 1

[Article by Hua Zong [5478 1350]: "Measures To Readjust the Farm Machine System To Suit Local Conditions Produce Results: Statistical Data from the Departments Concerned Demonstrate that Collective Tractor Ownership Is Prevalent in Areas Where Township and Town Enterprises Are Developing and Where the Collective Economy Is Strong"]

[Text] Statistical data from the Bureau of Farm Mechanization Administration in the Ministry of Agriculture, Animal Husbandry and Fishery demonstrate that as of the end of 1984 there were 4,006,000 tractors and 72,140,000 horse-drawn carts in the countryside nationwide (exclusive of state-run farms and ranches). Among these, collectives owned 875,000 tractors and 23,440,000 horse-drawn carts, or 21.9 percent and 32.5 percent, respectively. Farm households owned 3,123,000 tractors and 48,320,000 horse-drawn carts, or 77.9 percent and 67 percent, respectively. State-run machine stations owned 8,000 tractors and 378,000 horse-drawn carts, or 0.2 percent and 0.5 percent, respectively.

Looking at the situation in the provinces, municipalities and autonomous regions, the location with the highest proportion of collectively-owned tractors is Shanghai (94.1 percent), and next come Beijing (58.1 percent), Tianjin (45.9 percent) and Jiangsu (41.2 percent). There are 4 provinces and autonomous regions in which 30 to 40 percent of the tractors are collectively owned: Zhejiang (39 percent), Shandong (35.1 percent), Hubei (33.4 percent) and Xinjiang (32.4 percent). The cities of Suzhou, in Jiangsu, and Jiaxing, in Zhejiang, have 80 percent and 85 percent collectively-owned tractors, respectively. Collectively-owned tractors in Jiangsu and Shandong represent 21.5 percent and 13.4 percent, respectively, of the total number of collectively-owned tractors in the country.

The following characteristics pertain to locations having a relatively large number of collectively-owned tractors:

1. Township and town enterprise develops quickly and collective economic strength is solid. In these locales a large part of the labor force has been transformed and there is still a shortage of field laborers. In addition, income from township enterprises is high and farmers are unwilling to purchase tillage machinery on their own. Consequently, collectively-owned machine stations have been retained and take on the major agricultural tasks.

2. The output-related contract responsibility system in agriculture is formed to contract largely with specialized teams and groups, so agricultural machinery is still managed by the original farm machine station teams.

3. The machine stations that have been retained by collectives generally have a relatively full range of machinery and are well managed, produce good results, and can meet agricultural demands.

The parties concerned conclude that after reviewing and analyzing both positive and negative experiences in the 30-plus years of agricultural mechanization, the various locales are universally stressing a readjustment of the farm machine system and of various tasks based on objective economic patterns. They are not being arbitrarily uniform. The beneficial results of agricultural mechanization are also gradually increasing.

12510
CSO: 4007/15

NATIONAL

PEASANTS LEAVE FARMING FOR SPECIALIZED PRODUCTION

OW050329 Beijing XINHUA Domestic Service in Chinese 0815 GMT 4 Nov 85

[Text] Beijing, 4 Nov (XINHUA)—With the all-round readjustment of the structure of agricultural production, an increasing number of Chinese peasants have begun to specialize in commodity production or service trades while leaving the self-sufficient small peasant economy behind.

According to an investigation conducted in various provinces, autonomous regions, and municipalities under the central government by the State Statistical Bureau, 4,256,000 specialized households throughout the country, or 2.3 percent of the nation's total, had met the national standards by the end of 1984. Each specialized household earned an average annual income of 4,624 yuan, or 81 percent higher than that of other peasant households throughout the country.

After analyzing the present conditions of the rural specialized households, investigators of the rural economy pointed out that some new characteristics had emerged in the growth of specialized households in China's rural areas:

1. Rural specialized households are expanding their business operations. This can be seen in the emergence of a number of grain specialized households who have contracted to farm plots of 1,000 mu or larger, pig specialized households who have sold more than 1,000 head of fat pigs, chicken specialized households who are raising more than 10,000 chickens, and other specialized households who have contracted to develop barren hills, beaches, and water areas.
2. The number of specialized households engaged in second and tertiary industries such as industry, commerce, construction, transport, and catering or other service trades exceeded that of specialized households engaged in the first industry such as farming and breeding. As far as the number of specialized households was concerned, the number of specialized households engaged in the second and tertiary industries accounted for 52.2 percent of the total number of specialized households, while the number of specialized households engaged in the first industry accounted for only 47.8 percent; as far as the labor force was concerned, the former accounted for 50.9 percent of the total labor force of specialized households, while the latter accounted for 49.1 percent; concerning income, the former

accounted for 59.1 percent of the total income of specialized households, while the latter accounted for 40.9 percent. These facts show that an increasing number of peasants no longer regard land as their means of subsistence and they are leaving their land to engage in industry, commerce, and other trades. This has brought about a change in the situation in which 800 million peasants tilled the land only to feed themselves, and has also enabled the structure of agricultural production to develop rationally.

3. The more products the specialized households produce, the greater the contribution they make to the state. The annual income from specialized production of specialized households accounted for 75.6 percent of their total income. Households specializing in agriculture, forestry, animal husbandry, fishery, and industry were able to offer 68.5 percent of their products for the market. In Liaoning's Dalian City, there were 91,300 specialized households by the end of 1984, of which 8,315 delivered more than 10,000 jin of grain, fruits, pork, and eggs each to the state in that year. In Guangdong's Baoan County, 4.7 million live chickens were exported in 1984, of which 69 percent were provided by specialized households. In many localities specialized villagers and specialized markets emerged as the degree of specialization rose.

4. Higher labor productivity of specialized households. Each able-bodied man of these specialized households was able to earn average income of 1,859.6 yuan, of 1.1 times the total income earned by a rural able-bodied man throughout the country. The emergence of a large number of specialized households has stimulated more and more peasants to study science and apply technology to promote the growth of the productive forces in the entire countryside.

/9604
CSO: 4007/76

NATIONAL

STANDARDS SET FOR SPECIALIZED HOUSEHOLDS

OW041813 Beijing XINHUA in English 1629 GMT 4 Nov 85

[Text] Beijing, 4 Nov (XINHUA)--The State Statistical Bureau today issued an official guide on how to recognize "Zhuanyehu"--rural households specializing in commodity production or service trades. From now on, the following standards must be met by a rural family to qualify as being a specialized household:

--Devote its ablest workers or the bulk of its labor force and at least 60 percent of its worktime to one specialized line of production or service, with the income from this accounting for no less than 60 percent of its total income.

--Market at least 80 percent of its products, or no less than 60 percent for a household specializing in grain production.

--Have an income from sales of products at least double the average for all local families.

The standards will aid national statistical work, said the bureau. Until now, different standards have been used in different places to count the number of such households. Altogether, 4,256,000 rural households, or 2.3 percent of the nation's total, had met the national standards by the end of 1984, the bureau said.

The annual income from specialized production or services for these households averaged 4,624 yuan per household, or 75.6 percent of the total. Over 52 percent of these households were engaged in industry, commerce, construction, transport or service trades.

Households specializing in agriculture, forestry, animal husbandry, fishery and industry were able to offer 68.5 percent of their products for the market.

Current Chinese policies encourage a market-oriented economy to replace traditional small subsistence farming.

/9604
CSO: 4020/72

NATIONAL

PEASANT MARKETS THRIVING; PRODUCE SUPPLIES UP

OW041632 Beijing XINHUA in English 1507 GMT 4 Nov 85

[Text] Zhengzhou, 4 Nov (XINHUA)--Peasant markets are thriving, and there are now 56,000 of them throughout China, according to statistics given at a meeting held in Luoyang, Henan Province.

During the first half of this year, the total volume of transactions concluded at the markets was 66 percent higher than in the same period of 1984.

The supply of agricultural and sideline produce at the markets has increased since purchase and price control on meat, eggs, poultry, vegetables, fruit and aquatic produce were lifted earlier this year.

The markets, which were banned during the cultural revolution, are playing an increasingly significant role in the country's economy and people's lives, an official said at the meeting, which was held to discuss market management.

The official said turnover was likely to continue to increase, while prices were now stabilizing.

He noted that a third of the vegetables consumed in Beijing during June, July and August this year had been bought at peasant markets or from roadside vendors.

Peasants had also opened morning and evening vegetable markets in Beijing. This made it much more convenient for residents to shop.

/9604
CSO: 4020/72

NATIONAL

JOURNAL CITED ON INCREASE IN PRC GRAIN STORAGE CAPACITY

HK110700 Beijing CHINA DAILY in English 11 Nov 85 p 2

[Text] Since 1981, China's storage capacity for grain and oils has increased and storage costs have dropped, the CHINESE BUSINESS JOURNAL reported.

The improvement is due to improved management and restructuring, said the paper.

New storehouses, with a capacity of 9.7 billion kilograms, were built between 1983 and 1984. At the same time, a large number of old storehouses have been renovated to increase capacity.

Government grain departments have increased security and controlled pest and atmosphere problems through low temperature, low oxygen and low chemical treatment storage techniques.

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CSO: 4020/89

NATIONAL

CONSTRUCTION OF STORAGE FACILITIES URGED

Beijing NONGYE GONGCHENG [AGRICULTURAL ENGINEERING] in Chinese No 4, 8 Aug 85
p 4

[Article by AGRICULTURAL ENGINEERING editorial department: "Storage To Preserve the Freshness of Fruits and Vegetables Deserves Emphasis"]

[Text] Following the vigorous development of the national economy and the continuous rise in the people's standard of living and in foreign trade exports, a pressing demand has grown for a steady supply of fresh fruits, vegetables, and other agricultural products in the market. There is demand not only for satisfactory quantities of the goods and for wide variety, but also for good quality as well, especially for a wide variety of fresh fruits and vegetables in the off-season. In order to meet the pressing needs of the people, besides increasing the production of items for which there is a need, attention must also be paid at the same time to improving the technology of storage facilities so that spoilage during the peak season is avoided, shortages during the off-season are avoided, and supplies throughout the year are steady. As everyone knows, implementing proper storage to preserve freshness, which eliminates the large losses incurred during storage and transport, is much easier than producing from scratch the equivalent quantity of spoiled agricultural produce. Moreover, proper measures to safeguard against spoilage are perfectly feasible if energetically implemented. Therefore, storage to preserve freshness, and proper transport and processing, are important ways to provide a steady supply of vegetables, fruits, and similar agricultural produce, and are the fundamental technical measures for reducing losses. They require a high degree of emphasis and appropriate expansion because:

1. Fruits and vegetables are extremely sensitive to seasons and to geography and do not stand up well in storage. In season, they must promptly be stored properly to preserve freshness; otherwise, serious losses and waste will result. For example, in recent years the amount of winter cabbage stored throughout the nation has dropped sharply, owing to the reluctance of many villagers to store much and because many residents have moved into multi-storied buildings, thus significantly reducing aggregate storage capabilities. Consequently, every time the cabbage harvest season arrives, at many cities' markets cabbage is heaped into mountainous piles and improperly preserved. But as soon as the season passes, then the market supply once again becomes tight.

According to statistics, the average portion of winter-stored cabbage that is lost in the course of going from the field to the urban resident's table is as high as 70 percent. According to statistics from Beijing, Tianjin, Shanghai, and 20 other cities, the amount of vegetable waste that must be transported each year out of the cities reaches 4 billion jin. The government must use an enormous sum of money each year to pay for such vegetable losses. If the government, the producing villages, and the consumers would adopt appropriate storage measures to preserve freshness, then the quantity of losses could be correspondingly reduced.

2. Producing areas are scattered, the capacity of the transportation network for shipping is inadequate, the shipping facilities are incomplete, and the produce cannot be sent out promptly. Storage to preserve freshness at the production site is work that must be further developed and strengthened. The nation's land area is broad, and most of the fruit and vegetable production areas are far from the cities and towns; transport is difficult and shipping capacity is inadequate. It is not possible to do as foreign countries do, using expressways and "chains of cold storage" to promptly ship fresh agricultural produce to retail markets. For example, in the shipping of Xinjiang's Hami melon out of the province in 1983, losses reached 40 to 50 percent because transport was slow. If the producing areas develop local storage facilities, then during the harvest season produce can be properly stored to preserve freshness, which not only would overcome the limited capacity of transport and extend the time that produce can be shipped out, but it also would free up the transport system, reducing losses.

3. One reason that the promotion of storage to preserve freshness deserves emphasis is that at present the storage volume in the nation's storage facilities is seriously inadequate. According to statistics of relevant sectors, at present the storage volume in the nation's storage facilities can only accommodate 10 percent of production. Moreover, because harvest, processing, storage, transport, and other links do not form a complete chain, the annual rate of loses of fruits and vegetables has surpassed the United Nation's statistical standard of a 25 percent loss rate for the world's agricultural produce.

Because for a long time emphasis has been placed only on agricultural production and insufficient emphasis has been placed on systematic work after production, until now, fruits and vegetables have been stored in cellars with uncontrolled temperatures, packed roughly in bags, and most often transported and sold in normal temperature. There are virtually no cold storage facilities in the producing areas. Now is the time to change this situation. Storage technologies to preserve freshness should be developed to an advanced degree.

Since the promulgation of the Document No 1 in 1984, the storage and processing of agricultural produce, especially of fruits and vegetables, has advanced comparatively quickly, research into the storage and processing of agricultural produce has received definite attention, and the government has invested more than 2 billion yuan in research into the storage and processing of grain, cotton, fruits, vegetables, and other agricultural products. Moreover, these

measures have been designated as key projects in the Sixth 5-Year Plan. In addition, a number of colleges have established programs in agricultural produce storage and processing and in food processing. These programs are nurturing technical capabilities in this field, which will effectively speed development in the work of agricultural produce storage and processing. The appearance of households in the countryside that specialize in storage and processing not only contributes toward solving the problems of insufficient storage facilities, it also significantly helps in the use of traditional techniques of storage to preserve freshness.

To promote the storage of agricultural produce to preserve freshness, in order to reduce the loss of fruits and vegetables that have already been preserved, make full use of them, and increase their economic value, advanced storage facilities and technologies should be selectively imported. Research into storage facilities in the producing areas must also receive a high degree of emphasis. The storage technologies to preserve freshness that are already known should be extended widely, fully utilizing natural sources of cold, and combining techniques such as cold storage, temperature-controlled storage, cellar storage, chemical preservation, and packing into smaller units to preserve freshness. The appropriate expansion of storage facilities and technologies for specialized households should receive a high degree of emphasis. Developing the technology for the needed equipment and packaging materials for commercial fruits and vegetables and other items, and for appropriate use should be emphasized. Also, attention should be given to reducing the losses incurred in the course of transport.

In summary, it can be seen that the storage of fruits and vegetables to preserve freshness is work that has a considerable role in the development of agricultural production. So long as the work of storage to preserve freshness is emphasized and effective measures are taken, the technology of storage to preserve freshness will play an even greater role in the transformation of agricultural products into commodities. It is hoped that even more sectors of the economy and comrades everywhere will emphasize the work of storage of agricultural produce to preserve freshness.

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NATIONAL

STEADY DEVELOPMENT OF LIVESTOCK INDUSTRY

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese
No 8, 5 Aug 85 pp 33-34

[Article by Qiu Juanbin [6726 7165 2430]: "Promote Stable and Sustained Development of Animal Husbandry"]

[Text] Animal husbandry in China has developed in a stable and sustained manner since 1979. This is especially true of 1984, when the rate of development was greater than in several previous years. Output of primary livestock products and the total value of output in animal husbandry in 1984 compared with the 1983 figures show that total pork, beef and mutton output increased by 9.9 percent, reaching 30.81 billion jin. Cow and goat milk output grew by 16.9 percent, reaching 5.18 billion jin. Egg output grew by 28.9 percent, reaching 8.63 billion jin. The number of meat pigs taken out of inventory was up by 6.7 percent, reaching 220,471,000 head. The rate taken out of inventory was raised from 68.5 percent in 1983 to 73.9 percent in 1984. There was a 4.7-percent increase in the number of large draft animals, to 108.39 million head. The total value of output in animal husbandry grew by 11.7 percent, reaching 54.3 billion yuan.

Animal husbandry in China now is in a new period of major development. The following problems must be resolved to ensure stable and sustained coordinated development:

1. We must correct professional guiding ideologies and pay attention to continuity in principles and policies. The long period of "leftist" influence meant that there was an inadequate understanding of comprehensive development of animal husbandry and development of commodity production. Together with backward production patterns, irrational production structures, obstructed circulation channels and poorly arranged prices, this created a serious contradiction between output and demand. We must correct our professional guiding ideology and adhere to the principles advanced by leading comrades of the CPC Central Committee concerning the need for major development of animal husbandry. Animal husbandry production, which was in a position of sideline production for a long period of time, has become a major part of agricultural production. During the Seventh 5-Year Plan, we

first of all should centralize forces to solve the meat, milk and egg production and supply problems in large and medium-sized cities and strive to quadruple the total annual value of animal husbandry output by the end of this century. Now, based upon market needs, we should use advantages, make comprehensive arrangements, focus on key points and give a preferential developmental status to broilers, layers, aquatic fowl and dairy cattle with their rather high economic results and large and urgent social demand. We should improve pig varieties and improve the lean meat rate, extend cattle and sheep that are easily fattened locally, and increase supplies of high quality beef and mutton.

Second, there should be guidance by categories. Animal husbandry production in China is widely distributed across agricultural regions, pastoral regions, agro-pastoral regions and urban suburbs. We must adhere to administrative patterns that give primacy to household raising according to the characteristics of each category and develop them in accordance with local conditions. In the suburbs of large and medium-sized cities, we should make full use of manpower, technical and capital advantages in accordance with the principle of serving cities, enriching the peasants, enlivening markets and making things convenient for the masses. We should adopt joint advances by state-run, collective and individual administration and integrated managerial patterns, establish systematized commodity production base areas according to market demand, and make great efforts to develop fresh, high-quality meat, milk, poultry and eggs and processed foodstuffs. In agricultural regions, we should make full use of the advantages of abundant feed resources, sufficient labor power and multiple types of livestock and poultry products, do good work in converting grain, and strive to improve the proportion of animal husbandry in agricultural production as a whole as quickly as possible. Along with developing pigs and poultry, we should make great efforts to improve oxen varieties and develop multiple-use beef, dairy and draft cattle, expand the area planted in forage grasses and feeds, and actively develop cattle, sheep, rabbits, geese and other herbivores and bee-raising production. Pastoral regions, agro-pastoral regions and grassy mountainous regions are important herbivorous livestock base areas. They have great potential and should be actively developed.

2. There should be a solid foundation and a focus on manpower, systems, and base area construction. We must focus on improved varieties, feeds, epidemic prevention, production, processing, storage and shipping, marketing and other links in systematized facility outfitting work to further consolidate the foundation for capital construction of animal husbandry commodity base areas and derive even higher economic results.

China already has set up three preliminary livestock and poultry production systems. In the future, we should adhere to the principles of integrating self-breeding and self-raising with imports from abroad, integrating the breeding of purebreds with hybrid improved

varieties, and integrating livestock and poultry variety farms with specialized breeding households. First, we should take action to establish improved variety breeding systems and set up various types of original variety farms and breeding farms for each type of improved livestock and poultry varieties, develop dairy cattle and milch goats and integrate improvement of varieties with imports, with a focus on varietal improvement. Third, we should strengthen selective breeding work for improved varieties of livestock and poultry. Fourth, we should work hard to popularize artificial insemination. Fifth, we should do good work in scientific raising and management of improved varieties of livestock and poultry and make use of the purpose of improved varieties.

Major developments in animal husbandry require advances in feed production. We should be active in developing the feed industry and establish modernized feed and forage base areas. All areas should formulate plants for developing the feed industry according to the requirements of animal husbandry development. The cities should take the lead and strive to achieve a basic conversion to compound feeds by 1990. We must establish a good feed industry system, use multiple channels to collect capital, and set up many different types of factories and administration of multiple types of economic components. In the future, feed processing plants should be managed mainly by rural collectives. Large and medium-sized cities should make full use of their own advantages in livestock, grain, the chemical industry, medicine, light industry and other departments to establish additive plants, raw material processing plants and so on as needed. Some areas have decided to implement preferential policies to assist the feed industry. Examples include not collecting construction taxes on newly-built feed mills, tax exemption for 3 years after going into operation, giving appropriate preferential treatment to new varieties of feed products during trial sales periods, and so on, all of which deserve emulation in all areas. Agricultural and animal husbandry departments should work with related departments to formulate feed regulations and rational livestock and poultry raising standards, establish and perfect feed quality monitoring systems, strengthen monitoring and administration of feed quality, and guarantee the quality of feed products. We must prohibit the presentation of inferior goods as quality ones and the entrapment of the peasants.

Good work in livestock and poultry epidemic prevention and monitoring is the main link in guaranteeing the continued development of animal husbandry. The "Articles on Epidemic Prevention in Livestock and Poultry" issued by the State Council should be implemented resolutely.

There now is a very large contingent of animal husbandry, veterinary and grasslands workers. We should adopt effective measures to motivate their initiative and allow them to play their roles fully, and we should adopt many forms of personnel training.

We should use local advantages and motivate the tripartite initiative of individuals, collectives and the state-run sector. One successful experience that has been summarized in the development of animal husbandry production by many areas and cities is that the starting point should be the real conditions of their own areas, that individuals, collectives and the state-run sector should advance in unison, with the state-run sector and collectives as the backbone, and that great efforts should be made to develop specialized households and specialized villages to bring everyone along. Zhejiang Province has made great efforts to support household dairy cattle raising by focusing on households and household raising to have them advance in unison with collectives and the state-run sector. The number of specialized and key dairy cattle households in Zhejiang reached 12,633 households in 1984, and they were raising more than 20,000 head of dairy cattle, half of the total dairy cattle inventory in Zhejiang. The development of dairy cattle production has brought about obvious improvements in market supplies of fresh milk and dairy products. Total output of fresh dairy products in Zhejiang reached 170 million jin in 1984, a 2.28-fold increase over 1978, and production of dairy products reached 10,181 tons. In agricultural regions, we should integrate and perfect systems of contractual responsibility for output quotas in agriculture and develop an administration pattern that integrates specialized household, specialized villages and centralized raising with decentralized raising by millions of households. In the suburbs of cities, we should make state-run and collective livestock product enterprises and feed processing enterprises the backbone in conjunction with integrated administration by specialized households and specialized villages. All areas should develop a group of specialized animal raising households, specialized villages, and specialized service households in areas such as breeding of improved varieties, processing, storage and shipping, purchasing and sales at a certain scale in a planned manner to promote the development of animal husbandry production in the direction of specialization, commercialization and modernization.

The most urgent task at the present time is to adopt effective economic methods to encourage households and regions with grain surpluses to convert their grain locally into animal products. Animal husbandry in the suburbs of large and medium-sized cities should be developed as rapidly as possible to invigorate circulation and improve the quantity and quality of fresh milk, fresh eggs, fresh meat, live poultry and other animal products. We must take action to improve the quality and quantity of wool and work for a basic turn for the better in the production and supply situation for animal products during the Seventh 5-Year Plan.

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NATIONAL

RURAL RESTRUCTURING ECONOMIC REFORMS DISCUSSED

Shanghai SHIJIE JINGJI DAOBAO in Chinese 12 Aug 85 pp 3, 4

[Article by He Geng [0149 1649], Minister of Agriculture, Animal Husbandry, and Fisheries: Restructuring Agricultural Production, Reform of Economic Management System"]

[Text] Since the 3d Plenum of the 11th Congress of the CPC Central Committee, China's countryside has been through 6 years of economic reform, implementing throughout the country the output related contract responsibility system, which is based on families accepting contracts and which takes many forms. These reforms have strengthened the vitality of the rural economy, producing a fine situation without precedent. The signs of this are primarily: the 6 continuous years of bumper harvests in agriculture, animal husbandry, and fisheries; the change in agricultural production toward specialization, modernization, and increased sale of products as commodities; quite large developments in agricultural science education and the tapping of rural intelligence; agriculture, forestry, animal husbandry, sideline production, and fisheries are undergoing total development, the adjustment of the structure and makeup of agriculture is starting to get going, and here have been improvements in economic results; enterprises in villages and small towns are developing dramatically, already becoming a major bulwark of the rural economy; the material civilization of peasants is gradually improving, and there have been signs of the new phase of socialist spiritual civilization. At present the rural situation truly is very good, but in the move forward there have been some new developments which have produced new problems. The key to solving these problems and continuing the fine developments in the countryside is to persist in reform.

I. New Problems Faced by Agricultural Production Consist Primarily of Lack of Balance in Transition of Agricultural Production Toward Commodity Economy

One problem is that the areas within agriculture are not developing evenly. Cultivation has grown fairly fast, the procurement of grain has doubled within a few years--reaching 200 billion jin, cotton procurement has more than doubled, and these have shown that the circulation system has done a poor job of keeping up. For a long time animal husbandry and aquaculture have not held their own, unable to satisfy the needs of society, and the processing of

agricultural products and the service industry are even weaker. The second problem is that the quality of agricultural and sideline products is not high and there is little variety, so that their ability to meet the demands of the market and society is very low. For example, there is a lot of fat pork, little lean pork, and even less processed meat goods; less than 1 percent of the rice is of export quality, so that there is an oversupply of low-quality rice. The third problem is that processing, storage, and shipping facilities cannot meet the developing needs of rural commodity production, and the agricultural and animal products do not have reasonable price ratios.

Raising pigs is not as profitable as welling grain, because the grain conversion capacity is low and the rate is slow. The fourth problem is that local development is not even. Within China there are still 14 poverty-stricken areas, consisting of 325 counties in 16 provinces, affecting 80 million peasants whose problems of poverty, of having enough to wear and eat, still have not been solved. The fifth problem is that while the development of commodity production in the countryside is in very good condition, there are some areas with signs of doing things for the sake of form, putting on fancy airs, empty boasting, and chaotic raising of prices; in some places there is a growing tendency to use power for personal ends, and to cheat and to hinder the peasants; in every aspect of their lives the peasants carry quite heavy burdens. We must remain alert even though the situation is excellent.

The problems discussed above are essentially because the internal relationships in agriculture still are not balanced, the rural production structure still has not adapted to the needs of society. This lack of balance, rationality, and adaptability is the result of the following changes: once scarce agricultural products are now plentiful; the conversion of agricultural production from self-sufficiency or semi-self-sufficiency to commodity production; the continual improvement in people's lives, changing from a level concerned with staying warm and eating enough to a relatively comfortable level that offers many choices; due to the power of policy and science, the rate of agricultural development has surpassed expectations, but the corresponding commodity facilities have not kept up, and ideological work has also not kept up. These problems are all the problems of moving forward, the difficulties of development. Solving these problems and enabling agricultural, animal, and fisheries production to meet the needs of society requires readjustment and reform.

II. Reform Centralized and Assigned Purchases, Deregulates Prices of Agricultural Products

In December of last year a national conference on rural work was held, at which Premier Zhao Ziyang and Vice Premier Wan Li gave important talks. This year's [1985] Document No 1 issued by the Central Committee laid down a 10-point policy for the further invigoration of the rural economy. The overall guiding principles are: further reform the rural economic management system; guided by the national plan, expand the market's regulative role to enable agricultural production to meet the needs of the market; promote the rationalization of the structure of the rural economy; and further enliven the rural economy. The first point in the 10-point policy is to reform the centralized and assigned purchase of agricultural products.

Since 1954, China practiced state monopoly on the purchase of grain, cotton, and oil crops, and assigned purchase of other agricultural products and by-products. Centralized procurement and sales was necessary to concentrate capital for construction, restrict the urban and rural capitalism of that time, guarantee supplies to the urban population, and stabilize the market; it was in the interest of the people, and should be fully affirmed. But following the development of production and changes in the situation, its disadvantages became more and more obvious. Practicing a state monopoly on purchases and assigned purchases meant when the state planned something, the peasants produced it; the peasants produced as much as the state planned. Conversely, if the peasants produced something, the state had to buy it; the state had to buy as much as the peasants produced. In this way the peasants did not need to plan production based on the needs of society. In our previous production and procurement plans, going from the top to the bottom, we found it very difficult to make precise plans, to have the plans reflect the actual and up-to-the-minute needs of the market. Thus it is that the centralized state purchases and assigned purchases of agricultural products in fact cut the links between the peasants and the market. At present, agricultural production has already entered a new stage of commodity economic development. Since it is a commodity economy, it has to face the domestic and foreign markets and regulate production according to the needs of the market. Otherwise, continuing to use the old method of monopoly on purchases and exclusive sales would give the wrong message to the peasants. In general, an increase in agricultural products benefits the development of the national economy, but "the more the better" is not true of just any product, because the entire national economic development should be planned and have the right proportions. For example, if cotton continues to develop, the reserve supplies will be greatly increased, using up capital and creating waste, and also hindering the rational restructuring of agriculture. This in fact would just lead into a dead end. Therefore, reform of the system of centralized and assigned purchases of agricultural products and deregulating of the prices of agricultural products is a necessary step.

Reforming centralized and assigned purchases of agricultural products and deregulating agricultural prices is the second major reform since the introduction in the countryside of the output-related contract responsibility system. The main reasons why the Party Central Committee and the State Council decided to begin the reform of the pricing system with agricultural products and byproducts are: (1) Agriculture has had bumper harvests year after year, so that there is a fairly abundant reserve of grain, cotton, and oil; this has provided the material precondition for freeing prices. (2) Grain and cotton are now purchased by contract, which ensures the needs of consumers while guaranteeing the basic income of peasants. Freeing the prices on fresh and living products helps to increase production, raise quality, and reduce waste. Freeing prices is a major measure in the further invigoration of agriculture. (3) We lack experience in the reform of the price system, and there is no precedent in other socialist countries, so we must feel our way along, stopping at every step to examine the situation. Agriculture has turned around fairly quickly; relatively speaking, it is easier to shift production than in industry. Therefore, the Party Central Committee and State Council decided first to free the price of agricultural goods. This impresses upon us the great importance of doing our department's work well; in concert with concerned departments we must conscientiously work hard on these very

significant reforms, which will stimulate the rural economy to even greater activity.

Reforming the price system and expanding the market's regulative role will protect the interests of both producers and consumers. Given the financial limitations of the state, it is necessary to carry out thorough deployment and conscientious guidance.

The price of goods affects every household; in ensuring the supply at the parity prices of the fixed-quantity portion of the urban supply, some commodities will receive subsidies so that they can be sold at low prices; for each commodity a method must be devised to guarantee the basic stability of market prices. In general, in freeing the prices of agricultural products, we must be steadfast in our course, our measures must be reliable, and our work must be painstaking, so that we promote the flourishing development of the rural commodity economy as well as take into account the interests of both producers and consumers.

III Restructure Rural Production, Promote Balanced Development of Agriculture

In broad terms, the structure of rural production can be divided into three levels:

The first level is grain, cash crops and other crops; the second consists of the major agricultural sectors, namely farming, forestry, animal husbandry, sideline production, and fisheries; the third is the level of the rural economy, including rural industry, commerce, transport, construction, and service.

In the crops level, we should rationally adjust the relative proportions of grains, cash crops, feed crops and green manures, based on the needs of the domestic market and following the policy of never neglecting the production of grain while actively developing a variety of products. This will make the internal structure of crops even more rational. At the same time, we should adjust the distribution of crops and emphasize raising product quality and value. Based on the natural, transportation, and shipping conditions of different areas, we should balance the regional production of grain. Places well-suited to growing grain should steadily develop grain production and make sure that they profit from it; places which lack grain and are unable to bring it in should maintain an appropriate degree of self-sufficiency; places which are unable to ship grain out should convert as much as possible locally; certain areas which have a relatively developed commodity economy and can easily have things shipped in need not strive for self-sufficiency in grain--they can make appropriate reductions in the area planted in grain and change to planting cash and feed crops needed by the market, choosing whatever makes the best use of land. In mountain, grassland, and lake areas we should earnestly convert farm land back to forest, pasture, and fish ponds. People wish to eat well now. a change from the previous wish just to eat one's fill, and so quality improvement is an urgent task. The domestic markets now face a severe shortage of japonica rice and high-quality indica rice; there is huge overstocking of poor-tasting indica and a lack of famous, high-quality rice. It is planned to use 5 years' time to raise the amount of famous and high-quality rice to more than 60 percent of the total, and medium-quality rice to

more than 30 percent, causing a fundamental change in the quality of rice. There should be appropriate control of cotton output; based on the needs of the textile industry, the quality should be improved and exports should be expanded.

Here we shall talk expressly about the current grain situation in China.

(1) There have truly been very favorable developments in the grain situation. The 6 year total output has increased 200 billion jin, and the per capita output has increased from 600 jin to 800 jin. (2) Regional development has been very uneven. Several areas of concentrated grain production have had temporary excess production due to increased output outpacing conversion, while some poor areas still do not have enough grain. (3) The poor varieties of grain still outnumber the good ones. (4) Due to the effect of higher prices for agricultural production materials, in recent years the costs of agriculture have gone up annually, so that in many areas peasants do not have a strong interest in producing grain and have little enthusiasm for production. (5) Looking at future developments, China's grain problem is still far from being solved. The per capita amount of grain is merely that of the world average, and the consumption level of meat, poultry, eggs, milk, and fish is even lower. After last fall, some areas found it difficult to sell grain; this is merely the temporary excess from a low level of consumption, and is due to the fact that the problems of grain conversion and circulation still have not been solved.

Based on the above analysis, we believe that we simply cannot underestimate the grain problem. This year's Document No 1 from the Central Committee reaffirmed that we "should continue to implement the policy of never neglecting the production of grain while actively developing a variety of products." This is completely correct. Of course we need not be afraid if there are small fluctuations from year to year. It is a good thing when quality improves while quantity declines, since the product value has increased, the consumers are satisfied, and the peasants have more income; it is also a good thing when farmland is turned back into forest, pasture, and fish ponds, promoting a beneficial ecological cycle; it is also a good thing, benefiting the nation and the people, when economically developed areas and suburbs of cities reduce the grain acreage and change over to cash crops and animal husbandry with higher economic results, thus strengthening the agricultural vitality of these areas. However, main grain-producing areas musts maintain steady growth in grain production, for this affects the overall national economy. If the main grain-producing areas should lower grain production, the problem would be much bigger. Therefore it is absolutely necessary that we support these areas in accelerating conversion of grain, improving the facilities for shipping out grain, and making a big effort to develop animal breeding and the processing industry; this will make sure that the income of grain farmers does not drop, and that it actually is raised correspondingly.

At the level of agriculture, forestry, animal husbandry, sideline production, and fisheries, we should fully and rationally use every kind of natural resource to develop forestry, animal husbandry, and fisheries even more speedily. Animal husbandry should continue following the policy of major development. In areas with the proper conditions we should forcefully expand feed crops and plant forage grasses; strengthen the feed industry and the

development of grasslands; improve the rate of pigs reaching the market and develop pigs with more lean meat; give priority to varieties of poultry, eggs, milk, and fish which have high nutritive value and a high rate of return on feed used; actively develop beef cattle, sheep, geese, and other herbivorous livestock and poultry; and adjust the mix of animal products in order to gradually change the people's diet and strengthen their physical condition. Aquaculture should give equal importance to catching, breeding, and processing, with breeding at the center; each area should have its own priorities based on natural conditions; actively increase breeding; protect coastal resources; and open up open sea and deep-sea fishing.

At the level of the rural economy, Comrade Hu Yaobang pointed out during his inspection of eight counties in Hebei: rural production comprises at least eight areas, namely, crops, breeding, mining, processing, commercial services, transport, small-scale energy development and construction. At the same time that we are improving crop production and accelerating the development of animal husbandry and aquaculture, we should actively develop other areas of production, radically changing the ways in which hundreds of millions of peasants feed themselves. We should change rural and township enterprises from government- or semi-government-run to being run by the people; strengthen technical reform; systematically run joint operations with urban enterprises; raise the quality of enterprises; and improve economic results.

State-run farms, instead of purely opening up wastelands for cultivation, should become entities for the comprehensive operation of agriculture, industry and commerce. Instead of only being part of the state-owned system, they should set up worker family-farms; they should form multifaceted associations which sign contracts with their own workers and keep up outside contacts, increasing profit and economic power; in the development of the commodity market and during their participation in the self-regulating market, they should do more to be models and leaders.

In the restructuring of agriculture, they should fully make use of science, technology and agricultural mechanization, raise agricultural productivity, and further the shifts within the labor force.

In the past 6 years the reform of the agricultural economic system and the implementation of the output-related contract responsibility system started first in the poor areas of China; Fengyang and other counties in Anhui played a leading role.

The second set of reforms currently underway--freeing the prices of agricultural products, expanding the regulative role of the market, and restructuring agricultural production--have begun in the economically developed coastal areas. Guangdong and southern Jiangsu have already acquired some experience; 60 to 80 percent of their work force have switched over to the industrial, sideline, and service industries; the labor productivity rate, the commodity rate, and the per capita income have all had major increases. The differences between the city and the countryside and between industry and agriculture are just in the midst of shrinking. All of this is becoming increasingly attractive to villages everywhere in China.

During Premier Zhao Ziyang's inspection of the Zhu Jiang delta and the Chang Jiang delta in November of last year, he mentioned that agriculture in these economically developed coastal areas should arrange production on the pattern of trade, industry and agriculture; that is to say, it should have as its goal entry into the international market. Changes in the structure of agriculture should be considered based on export needs. In considering what to process and what to plant, we should see what the international market needs. First of all, much foreign currency will thus be earned for the country, while at the same time the coastal areas will be enabled to become rich as soon as possible.

The coastal areas have relatively favorable social and economic conditions for the expansion of the commodity economy. With the organization of mutual assistance between north and south and between east and west in China, information, technology, capital, and skilled manpower from the economically developed coastal areas will gradually diffuse and shift into the interior, while the abundant resources and manpower of the interior will support the coastal areas. This will be able to accelerate progress in the development of the rural commodity economy.

We should work hard to further the economic integration of the city and countryside. We should methodically organize the step-by-step diffusion of urban production power into the villages, distributing it rationally. Ninety-eight percent of the parts and components for the "White Orchid" brand washing machine, produced by the Beijing Washing Machine Factory, are sent down to the countryside. In the past 5 years, factory workspace has not been enlarged, and the work force has not grown much, but output has grown 30 times and profit has increased 50 times. At the same time, it has brought along with it many village and township enterprises, so that people call this the "White Orchid road." This new model of an urban-rural economic setup is of general interest for the entire nation. At the same time, we should actively encourage peasants to enter cities to set up service industries, providing the facilities and conditions for bringing fresh and living products into the city.

We must see that the restructuring of agricultural production affects the restructuring of the many facets of agricultural production, the labor force, the intellectual force, and consumption. It is quite a formidable, complex and long-lasting task. We must be like clever old ladies in this restructuring. The present surplus of grain and cotton is just the right opportunity to restructure agriculture. Freeing prices of agricultural products and expanding the market's regulative role also provide the right conditions for restructuring agriculture. We believe that through serious work and continual summary and exchange of experiences, the failure of agriculture, animal husbandry, and aquaculture to meet the needs of society will gradually change. The second set of rural reforms will certainly succeed.

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NATIONAL

BRIEFS

SALT-RESISTANT RICE--Nanjing, 9 Nov (XINHUA)--A type of rice suitable for heavily saline soil has been developed by the Jiangsu Provincial Academy of Agricultural Sciences after six years of experiments. The strain, "salt-resistant rice 80-85," yields 4.5 to six tons per hectare when it is irrigated with water containing 0.5 percent salt. Agrotechnicians attending a recent meeting in Rudong County, Jiangsu Province, affirmed it as the best salt-resistant strain in China. Trial growth on 27 hectares in Jiangsu, Henan, Hebei and Shandong Provinces over the past few years showed that it reduced an average of nearly 80 percent of salt in the one-meter-deep topsoil. China used to improve its 26.7 million hectares of saline and alkaline farmland by adding irrigation facilities or applying organic fertilizer, which requires big investments of money and time. The new strain was selected and screened from 500 varieties provided by the International Rice Research Institute of the Philippines. [Text] [Beijing XINHUA in English 0712 GMT 9 Nov 85 OW] /9599

RICE PEST CONTROL--Nanjing, 10 Nov (XINHUA)--Comprehensive pest control measures developed by Chinese agronomists over the past three years have brought under control the pests and insects harmful to rice, one of China's major grain crops. The measures include selection of rice strains resistant to adversities, rational close planting and intensified field management to make it hard for harmful insects to survive, controlled use of chemical fertilizer and a full use of the insects' natural enemies. This has ended sole reliance on chemical control which polluted the crop, did harm to paddy fields and killed natural enemies. Rice accounts for more than 40 percent of all grain crops in terms of planting acreage. Rice pests and diseases include rice blast, sheath and culm blight, rice-stem borer and hoppers. The pest control measures can save an estimated 750 kilograms of rice from each hectare a year, said an agricultural expert from the joint research team of the Jiangsu Academy of Agricultural Science and the Southwest China Agricultural University, which undertook the experiments in different areas. [Text] [Beijing XINHUA in English 1502 GMT 10 Nov 85 OW] /9599

HUGE RAPESEED HARVEST--This summer's rapeseed harvest was the second bumper harvest in China's history. The quantity of rapeseed purchased also increased considerably compared with the same period last year. According to statistics for the 12 major rapeseed producing areas of Shanghai, Jiangsu, Zhejiang, Anhui, Jiangxi, Henan, Hubei, Hunan, Sichuan, Guizhou, Yunnan and Shaanxi, up to August 20, there were 6,885,000,000 jin already in granary, which met 96.1 percent of the target; this was an increase of 1.93 billion jin over the same period the previous year. It is predicted that the plan will be fulfilled, by the end of the year. Currently, the provinces which have fulfilled or exceeded the target are: Zhejiang, Henan, Sichuan, Guizhou, Yunnan and Shaanxi. Those whose in-granary amounts increased more than the same period the previous year are: Sichuan increased 656 million jin; Anhui increased 566 million jin; Jiangsu increased 320 million jin; Henan increased 220 million jin; Shanghai, Zhejiang, Hubei, Guizhou and Shaanxi all increased by various amounts. [Text] [Beijing NONGMIN RIBAO in Chinese 9 Sep 85 p 1] 13063/13045

CSO: 4007/459

FUJIAN

INCREASED OUTPUT OF AQUATIC PRODUCTS, FRUIT

Fuzhou FUJIAN RIBAO in Chinese 24 Aug 85 p 1

[Article: "Eight Fujian Provinces Recite the 'Canon of the Mountains and Sea'--Aquatic Products and Fruits, the 'Lead Singers, Sing the Vanguard Song: The Momentum of Aquatic Product and Fruit Production Development in Fujian Is Unprecedented; More Than 500,000 Mu of New Fruit Trees Have Been Planted, 80,000 Mu of Freshwater Fish Ponds Have Been Dug, and 60,000 Mu of Sea Breeding Area Has Been Added"]

[Text] Some people have called 1985 the "year of the two waters" (aquatic products and fruits). It is no joke! According to statistics from related departments covering the period up to the middle of August, more than 500,000 mu of land has been planted in fruit trees in this year in Fujian. Newly-dug freshwater fish ponds cover 80,000 mu, and 60,000 mu of new seawater breeding area have been added, so mountainous and coastal areas are developing together. The speed of development and good results seldom have been seen in the past. Aquatic products and fruits have played the role of the "lead singer" in the reading of the "Canon of the Mountains and Sea."

Who directed the "lead singer" of the "Canon of the Mountains and Sea?" Did they depend on administrative orders? No, they did not. The masses in Xiabaishi Town in Fu'an County embanked three ponds and raised more than 80 mu of prawn on an experimental basis. Output averaged 260 jin per mu and the net profits were many times those from its use as paddy land. The results were a silent order. A "pond embanking fever" has appeared throughout the town this year. There are 30 new embanked ponds and more than 2,000 mu of prawns are being raised. The CPC secretary of the town said that "something that provides high results is undertaken eagerly by the peasants as soon as the leaders suggest it." Examples like Xiabaishi Town can be found in Xiapu, Ningde, Lianjiang, Putian, Zhangpu, Dongshan and other counties. The masses in Xingchen Township in Dongshan County invested 780,000 yuan this year to reclaim more than 2,300 mu of shallow sea and beaches, and they are raising more than 10 varieties of fish, shrimp and shellfish products.

Not depending on administrative measures is not the same as having no need for leadership. Many counties and townships that have done well have worked under unified planning and unified quality standards, and they have done good service work and allowed the masses to develop administration. The Zhangpu County Rural Flower, Fruit and Aquatic Products Center Co is a

service center. The view from the peaks of Dongsheng village in this county's Changqiao Township is a surrounding vista of layer upon layer of parallel trench-like orchards. The area was reclaimed by a unified center (company) project team after unified planning. Zhangpu County also has opened up more than 10,000 mu of standardized orchards.

What key did the lead singer use in reciting the "Canon of the Mountains and Sea?" It was the key of domestic and foreign markets. Aquatic products and fruits are in high demand on Hong Kong and international markets. The pattern of opening up has caused many peasants to set their sights on international markets and concentrate on the production of well-known export products. Yunxian County's "Xiaban Loquats" hit the market one-half to one month earlier than those from Guangdong, Taiwan and Putian County. The masses of this county have taken note of this advantage. They speeded up the raising of seedlings and expanded from 1,000-plus mu to more than 3,000 mu. Output reaches 10,000 dan, and Xiaban has become a specialized loquat exporting village. Oysters raised by suspending them in the sea have an output several times that of oysters raised on rows of rocks, and they can be supplied for export. Taiping oyster parent oysters are available this year and all areas are competing to import and raise them. The area has expanded from 54 mu in 1984 to 900 mu at present. The masses in all areas and especially those along the coast are developing their own particular aquatic and fruit products to get in on international markets. Examples include Dongshan fast-growing lobsters, Zhangzhou and Longhai lichees, Hui'an squid, Tong'an longan, Pingtan grouper, Xiapu and Tanpu prawns, Jinjiang, Luoyuan and Lianjinag laver [Porphyria spp.] and so on.

Of course, the momentum of the lead in aquatic products and fruits cannot be estimated before the fact, and service work in some areas has not kept pace completely. Disorganized seedling planting has occurred in some regions and technical training and guidance have not kept pace. Seedling raising, feeds and other matching facilities have not been dealt with completely and examination and disease inspection of imported varieties has not been done completely well. The arrival of the harvest may bring on difficulties in selling and exporting for some types of products. All of this awaits attention and resolution in the future.

12539/12899
CSO: 4007/41

FUJIAN

COMMODITY BASE AREA FOR AQUATIC PRODUCTS SET UP

Fuzhou FUJIAN RIBAO in Chinese 24 Aug 85 p 1

[Article: "Establish Export Commodity Base Areas, Strive To Stabilize Sources of Goods that Create Foreign Exchange--The Fujian Province Aquatic Products Import and Export Company Completes Its 1985 Foreign Exchange Tasks Five Months Ahead of Schedule"]

[Text] The Fujian Province Aquatic Products Import and Export Co has completed ahead of schedule its 1985 foreign exchange earnings tasks for 5 months. A total of 2,000 tons of aquatic products has been exported up to the end of July and more than \$6.66 million was earned. If the amount exported that has not been paid for is added in, the entire foreign exchange earnings task for 1985 already has been completed.

The Fujian Province Aquatic Products Import and Export Co is a specialized company that was set up in 1981. It handles unified administration of aquatic product import activities for all of Fujian. Integration of trade, industry and agriculture has permitted this organization to arrange production and provide processing services. It also handles import and export matters, and the foreign exchange earnings from exports have increased year after year. The company earned more than \$15 million in foreign exchange earnings in 1984, up by 47 percent over 1983 and more than double the amount prior to the establishment of the specialized company.

In order to adapt to the opening up to the outside and the competitive situation of multiple exporters that followed the opening up of aquatic products, this company began by establishing an export commodity base area and striving to stabilize sources of export goods. They integrated with the masses in Putian, Changle, Hui'an, Jinjiang and other areas to set up a group of base areas for breeding eels and Japanese crabs and facilities for the temporary raising of swimming crabs, and they provide the masses with timely export commodity information and technical information as well as capital and feed services. They invested 20,000 yuan in 1984 in a joint project with Changle County's Tangang Aquatic Product Breeding Grounds to build a temporary raising pool for swimming crabs. This has enabled the fishermen to centralize the temporary raising of the live swimming crabs they have caught, and it has guaranteed the export of live crabs and doubled the value of their products. This raising ground alone has supplied more than 270 tons of live swimming crabs this year and earned more than \$1.2 million in foreign exchange.

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CSO: 4007/41

FUJIAN

PRODUCTION, PROCUREMENT ANALYZED IN CONFERENCE

Fuzhou FUJIAN RIBAO in Chinese 2 Aug 85 p 1

[Article: "Telephone Conference Held Between Provincial Party Committee and Provincial Government: All Localities Asked To Handle Fall Grain Production Well, Strive To Reap More Grain and Work To Complete Summer Grain and Oil Crop Procurement Tasks"]

[Text] Last evening a telephone conference was convened between the provincial party committee and the provincial government, wherein the entire province was asked to apply itself to doing a good job on autumn grain production and to strive to complete summer grain and oil crop procurement tasks.

The conference was chaired by Deputy Governor Comrade Wang Yishi [3769 0001 1102], and Comrade Wen Xiushan [3306 4423 1472] spoke at the meeting.

Comrade Wen Xiushan first analyzed the situation in the Fuzhou countryside during the first half of 1985. He said that in the past year all areas have conscientiously implemented the spirit of CPC Central Committee Document No 1 (1985), further arousing the enthusiasm of the vast masses of cadres and spurring on greater growth in rural commodity production. During the first half of 1985 there has been satisfactory and regular overall growth momentum in the readjustment of the rural industrial lineup. After restrictions were relaxed on agricultural products, market supply improved and there was significant development in forestry, animal husbandry, fishery and various cash crops. The rural situation in the first half of 1985 has been satisfactory. However, we must take a sober look at new circumstances that have appeared in the grain issue. These are that early in the season we revised downward some of the grain sowing area, and when the early rice was earring and flowering over a large area it was hit by four disastrous typhoons and floods. Grain yields were substantially reduced.

Comrade Wen Xiushan requested that leaders at all levels adopt practical measures to counter the new situation and new changes that have arisen in the grain issue. They should lose no time in taking responsibility for current grain production, procurement and transfers from other areas in order to ensure that the people have what they need to live and that there will be

smooth progress in reform and economic construction. To this end, the various localities are to do as follows:

1. Attend to doing a good job on autumn grain production and strive to maintain the level of total grain yield--17 billion jin--that we achieved in 1984. Because of the four disastrous typhoons and floods this year, grain yields dropped substantially in the first half of the year and greatly added to the grain production task for the latter half of the year. We must concentrate all our attention on grain production. This means that we must plant sufficient late rice and late sweet potatoes and cultivate them well, and we must also conscientiously enhance our autumn grain field management and improve per-unit-area yields. The autumn grain yield represents about two-thirds of total annual yield. The late season has great potential for increasing production. We must have a foothold from which to fight natural disasters and strive for a bumper harvest, and we must enhance field management by emphasizing water and fertilizer management and disease and pest control. Losses caused by late-season diseases and pests run about 200 to 300 million jin in an average year. If we do a good job of controlling disease and pest damages we can harvest an additional 200 to 300 million jin of grain.

We must fully utilize land allocated to peanuts, jute, flue-cured tobacco, watermelons and late seedlings to do as much as we can to expand cultivation and do intercropping of late rice, late sweet potatoes, autumn soybeans, autumn corn and so forth. There are also some young forests, orchards and land that is idle in the fall that we must fully utilize. If we can expand cultivation and intercropping by 1 million mu all over the province, and if we can do a good job on it, then we may harvest an additional 300 to 400 million jin.

We must complete our preparations as early as possible and expand the winter planting area appropriately. In addition to expanding cultivation of rape, vegetables, broad beans, peas and Chinese milk vetch, areas having the right conditions to do so must grow more barley and wheat and work hard to raise the total provincial winter planting area to 2 million mu.

2. Emphasize completion of summer grain and oil crop procurement tasks. Fuzhou's 1985 assigned procurement quota for unprocessed grain calls for 1.7 billion jin of summer grain. We must enhance ideological and political work and educate farmers to consider the interests of the state, the collective and individuals alike, and to handle their affairs in strict accordance with assigned procurement contracts. This will ensure completion of the procurement assignments for grains and for peanuts and other oil crops. We must strive to buy more from locations having an abundance of summer grain so as to achieve the annual assigned procurement quota.

We must conscientiously implement the provincial people's government circular concerning satisfactory accomplishment of summer grain and oil crop procurement work. With the exception of the deduction, as per regulations, of advance purchasing deposits by the departments concerned, no other units may act to demand monetary deposits. We must deal in grain on the one hand and in money on the other hand, simplify procedures, make things convenient for the masses and arouse the initiative of the masses to sell more and better grain.

At the same time, we must consider matters as a whole and make adequate arrangements, particularly for the daily life of the masses in areas hit by serious disasters early in the season.

We must strive to do a good job in grain allocation and transport work. In 1985 the central authorities arranged for grain to be transferred in to Fuzhou, and as of now the sources of grain have been fixed and the transport forces arranged. Right now the crucial problem is that we must promptly unload and distribute the grain that we transport into the province. All levels of party committees and government and the various departments concerned must act in close coordination, making a concerted effort to cooperate on a good job in grain allocation and transport work. In addition, we must support and encourage the masses to run grain shops and rice markets, regulate their surpluses and deficiencies and increase the grain supply for society.

Finally, Wen Xiushan emphasized that the grain issue is a major matter affecting our overall situation. Party committees and government at all levels must organize certain forces to go right to the front line of autumn grain production, enhance investigative research and discover and resolve problems promptly. All the departments concerned must support autumn grain production in every respect. The commercial, supply and marketing and transportation sectors must act in close coordination, making concerted efforts to allocate and ship fertilizers, pesticides and other farm production materials to the front line of production in a timely fashion. In short, we must make every possible effort to apply ourselves to doing a good job of autumn grain production, and we must strive to achieve a record harvest in the 1985 grain crop.

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CSO: 4007/15

GANSU

BRIEFS

WOOL PURCHASES DECREASE, PRICES SOAR--This year's spring season for purchasing sheep wool has come. What is the situation? In Gansu Province's survey of production and sales for the eight counties and districts of Gaotai, Anxi, Chongxin, Xihe, Qi'an, Qilihe, Minle and Linze, social production has decreased by 6 percent. Last year's actual output was 600,000 jin and this year's output is predicted to be 576,000 jin. It is estimated that 315,000 jin will be purchased by the state this year, a 25-percent decrease from last year. The purchasing price for top quality wool has increased an average of 83 percent. According to the survey, the main reason for the decrease of sheep wool is due to the decrease in number of sheep livestock. There were 22,000 head of sheep in Chongxin County last year, whereas this year it is 12,000 head, a decrease of 45.4 percent. The main reason for the drop in state purchases of sheep wool was that the outside sales flow was severe due to a large number of individual business units going from place to place purchasing at high prices. This situation was comparatively common all over. From January to May of this year, the purchased volume by the supply and marketing cooperative system in the eight counties decreased by 74 percent compared to the same period last year. However, the purchase prices had gone up by 58 percent because of competitive purchasing by many buyers. In order to prevent the source of supplies from going through outside sales, Gansu Province recently gave notice stating that any animal product leaving the province has to be examined and approved by the Provincial Economic Committee. [Text] [Beijing NONGMIN RIBAO in Chinese 8 Aug 85 p 2] 13113/12955

CSO: 4007/457

GUANGDONG

GUANGDONG EXPECTS TO REAP RECORD SUGAR HARVEST

HK140153 Beijing ZHONGGUO XINWEN SHE in Chinese 0409 GMT 12 Nov 85

[Text] Guangzhou, 13 Nov (ZHONGGUO XINWEN SHE)--According to a recent survey of the departments concerned, this year's output of cane sugar in Guangdong Province is expected to reach over 17 million tons, an increase of some 20 percent compared to last year. At present, some localities have entered the harvesting and sugar refining seasons. It is expected that during this sugar refining season, the province's output of cane sugar will break the record.

After implementing the new policy for purchasing cane sugar, the peasants are more enthusiastic about growing the plant. Last year, the province's total area for growing cane sugar was 4.32 million mu, reaching an all-time high. But the area has been sharply increased this year, to total 5.97 million mu. Though repeatedly hit by natural disasters, most of the areas in the province still grow the plant well because the peasants promptly carried out relief work and strengthened the field management.

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CSO: 4007/85

JPRS-CAG-85-033
12 December 1985

GUANGDONG

BRIEFS

HAINAN SUGARCANE PRODUCTION INCREASES--This season, output of sugarcane on Hainan Island may reach 3.74 million tons, which would be an increase of 53 percent over the preceding sugarcane pressing season. [Summary] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 7 Nov 85 HK] /9599

CSO: 4007/85

GUANGXI

GUANGXI TIGHTENS UP ON FORESTRY VIOLATIONS

HK140323 Nanning Guangxi Regional Service in Mandarin 1130 GMT 12 Nov 85

[Excerpt] According to GUANGXI RIBAO, under the specific guidance given by the central discipline inspection commission, the Ministry of Forestry, and the regional work group, the Liuzhou prefectural CPC committee and administrative office has dispatched a work team to adopt resolute measures combining ideological education with severe punishment. The basic aim is to halt the 5-year-long malpractice of forcibly seizing and wanton felling of trees on the state-run (Beijiang) tree farm. Up to now, some 1,000 cubic meters has been recovered or returned and some 150,000 yuan has been recovered. More than 20 lawless persons have been arrested.

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CSO: 4007/85

GUIZHOU

GUIZHOU CONFERENCE DISCUSSES DROUGHT

HK170335 Guiyang Guizhou Provincial Service in Mandarin 2300 GMT 15 Oct 85

[Excerpts] Last night [15 October], the Provincial People's Government and the Provincial Military District held a telephone conference calling for all people in the province to pool efforts to do well in autumn sowing and in army recruitment.

The conference was presided over by (Tang Yesheng), vice chairman of the Provincial Economic Commission. (Liu Yulin), vice governor; and (Zhang Zhenzhong), deputy political commissar of the Provincial Military District, made speeches.

The conference held that, judging from the present situation, the province's autumn cultivation situation was good. According to statistics, as of 11 October, the province had reaped 80 and 90 percent of the maize and rice respectively, turned over 3.4 million mu of soil, and had grown more than 500,000 mu of wheat and rape. The growth rate was greater than the past.

The conference pointed out that now the province is generally facing drought. Some areas have not attached enough importance to the production of summer grain and the leadership has not implemented the work effectively. In the light of the situation, the conference urged the localities to carry out the following tasks:

First, from now until early November, the governments at various levels must concentrate their efforts on autumn cultivation.

Second, they must base themselves on the work of fighting against drought by rushing the planting of the crops.

Third, they must improve the quality of sowing and popularize the use of improved varieties.

Fourth, banks, industrial and communication departments, and so on must do well in providing agricultural capital and various means of production. They must actively support the peasants in fighting against drought.

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CSO: 4007/85

HEBEI

BRIEFS

RICE OUTPUT INCREASES--To increase rice output and improve the people's lives, the Hebei Province Central Agricultural Technology Extension Station has accelerated the pace of testing, demonstration and extension of early rice planting techniques, and the area planted early in rice has expanded year after year, reaching 220,000 mu in 1984. Early plantings were made on more than 800,000 mu this year, a 2.7-fold increase over 1984. Such planting now is being done in all areas with the exception of Zhangjiakou Prefecture, and Tangshan City and the four prefectures of Shijiazhuang, Baoding, Xingtai and Handan have planted more than 100,000 mu. The extension of early rice planting techniques has expanded the area planted in rice in Hebei Province this year to more than 3 million mu. Now, both spring-planted and summer-planted rice seedlings everywhere are full and strong and growing well. All areas now are focusing on field management and actively preparing to prevent rice blast. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 9 Sep 85 p 1] 12539/12899

CSO: 4007/41

HENAN

WATER SUPPLY CONDITIONS, PROBLEMS FACING HENAN CITIES

Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 3, Sep 85 pp 20-28

[Article by Wang Wenkai [3769 2429 2818], Institute of Geography, Henan Provincial Academy of Sciences]

[Abstract] Through a field investigation and analysis of urban water supply conditions and main problems in municipal water consumption in Henan Province, the author explores opening resources of water supply and way of economizing water by providing a scientific basis for urban construction. The 16 cities discussed in the article are located in the North China Plain with thick sedimentary deposits and developed aquifers, and an abundance of groundwater resource. In addition, large rivers pass by the cities with runoffs yet to be exploited; however, the river runoffs vary considerably, year to year, are uneven in different months, and contain large amounts of sand. For municipal water supply, many necessary engineering facilities (such as adjustment and storing of water) should be applied to meet the demand. Main problems in exploiting water resource are pressure-drop funnels under many cities (owing to excessive exploitation of groundwater) and water waste, causing unnecessarily high municipal water consumption. The repeated use rate for industrial water is 35 percent in the province; the rate is much lower than 60 percent in the world's developed countries. Even the water consumption (an average of 439 tons for cities in Henan) per 10,000 yuan of production output is high compared to 119 tons in Shanghai and 147 tons in Shenyang in 1982. The gradual increase of sewage output is causing more serious water pollution. Ways of economizing water and water-source protection are then presented. Water meters can drastically cut water consumption of residential use since at present most households pay fixed monthly water fees. One figure shows cities in Henan Province. Three tables list data of runoffs, ground-water funnels and projected water demands of Zhengzhou City.

10424/12948
CSO: 4011/3

HUBEI

EARLY RICE WAREHOUSED QUICKLY

Wuhan HUBEI RIBAO in Chinese 7 Sep 85 p 1

[Article: "This Year's Early Rice Is Being Warehoused at a Fast Pace in Hubei--Grain Stations Are Opening Their Doors To Buy, Peasants Are Selling Grain Enthusiastically"]

[Text] The 1985 early rice crop in Hubei is being warehoused quickly, with 1,750,570,000 jin of early rice already in storage by 31 August 1985.

A reduction in the area planted in early rice in Hubei this year and natural disasters resulted in a slight reduction in output compared with 1984, but it still was a bumper harvest year. The peasants have not forgotten the state in this bumper crop and are going eagerly to the grain stations to sell early rice. An additional 450 million-plus jin of rice has been warehoused in 1985 compared with the same period in 1983.

After the early rice was gathered and taken to the threshing ground, grain purchasing departments in Hubei divided up villages and arranged days, made appointments to purchase, issued certificates to households, made internal deliveries and adopted other measures in a complete set of effective methods to solve problems of long lines of peasants and difficulties in selling grain. Gong'an, Mianyang, Xishui, Xiaogan and other counties and cities now have completed early rice contractual fixed purchase plans ahead of schedule.

12539/12223
CSO: 4007/38

HUBEI

HUBEI MEETING DISCUSSES GRAIN WORK ARRANGEMENTS

HK090345 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 8 Nov 85

[Excerpt] Vice Governor Guo Zhenqian said at the provincial grain work conference that concluded yesterday: In grain work this year and next, we must seriously implement the spirit of Comrade Chen Yun's speech on grain work delivered at the National Conference of Party Delegates, and continue to publicize the fact that agriculture is the foundation of the national economy and that grain is the foundation of the foundation. There will be chaos, not stability, without grain.

Readjustment of the agricultural structure must be done in a planned and measured way. We cannot have everyone reducing the grain area as soon as readjustment is mentioned. We must ensure that the masses are launched to grow grain on all suitable land. We must maintain steady growth in grain output.

Comrade Guo Zhenqian stressed: We must further implement, readjust, and reckon up this year's contract purchase order plan. Areas of bumper harvest can sell excess grain after fulfilling their contracts. The excess portion will not be regarded as the base figure for next year's contract. Areas that have not fulfilled their contract plans must first make up for the shortfall from their late rice stores before engaging in business at negotiated prices. The stored late rice must be properly sorted out and dried. The water content standard set by the state must be strictly implemented, and the quality of the grain must be ensured.

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CSO: 4007/85

HUNAN

PERSEVERE WITH AGRICULTURAL REFORMS

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 8,
5 Aug 85 pp 5-6

[Article by Cao Wenju [2580 2429 5282], Vice Governor of Hunan Province:
"Be Resolute in Reforms, Make Progress Stably"]

[Text] The rural economy's entrance into the second step of reforms has led to several new conditions and new problems that require a correct understanding and resolution.

I. We Must Have a Correct Understanding of Readjustments in Rural Industrial Structures

Readjustments in industrial structures are the primary task of the current second step of rural reforms, and they are the key to achievement of a doubling of agricultural output by the end of the century and enrichment of the peasants. The peasants have been made very happy by the CPC Central Committee's Resolution No 1 of 1985 and breakthroughs have been made in readjustment of industrial structures. There are four main characteristics: (1) The peasants have been adapting to local conditions and looking toward the market, which has brought a trend toward rationality in the utilization of land resources. (2) After the relaxation of policies concerning grain and pigs, the peasants everywhere have focused attention on development of the breeding industry, which has promoted development of pigs and poultry. (3) Rural and small town enterprises have developed quickly, and the development of household industries and jointly-run enterprises has been the most rapid. (4) Rural labor power has moved into secondary and tertiary industries. The excellent situation is that the masses are happy, a few departments are grumbling, and some leaders are worried. Some departments are complaining that policies have been relaxed too much and too quickly, saying Resolution No 1 of 1985 has "enriched the peasants and blocked out departments." Some leaders still carry the old viewpoint of "taking grain as the key link" and place grain production in opposition with readjustments in industrial structures. This requires clarification of two questions:

First, we must integrate no relaxation in grain production with development of the diversified economy. The situation in grain production not only has strong effects on peasant incomes but also concerns the development of the

breeding industry and the food products industry as well as construction in the entire national economy. We always must pay attention to and focus on grain production, but we cannot take the old path of "taking grain as the key link" and "playing a singles game" [monoculture]. Calculated according to the planted area, the prediction is that the area planted in grain in Hunan has been adjusted downward by about 2 million mu in 1985, a reduction of 4.8 percent. Most of the area so reduced has been used to develop cash crops and digging fish ponds. Some has been taken out of cultivation for reversion to forests or lakes. This is rational and appropriate and is not an "excessive readjustment." Readjustments also must be made for years to come. Some comrades now always are anxious about the downward reduction of even a little bit of cultivated land that is not suited to grain, and they use the planted area during the time of "taking grain as the key link" as a standard, so they feel that grain production has been relaxed. This is a mistaken view. Grain must become a commodity if we wish to gain advantage from its production. Handling affairs according to the law of value has provided necessary compensation for productive investments. The self-sufficient production of the past could never become an advantage. The excessively low purchase prices for grain now have affected peasant initiative. This question deserves attention.

Some comrades now have misgivings about placing decision-making rights over readjustments in industrial structures in the hands of the peasants, and they fear blind action. According to an investigation I made in rural areas, most of the readjustments are rational, and they were done to meet market demand and are economical for the peasants. It should be noted that overly rapid readjustments in agricultural production could lead to a bit of blind action, but we should not find too many faults in them. Readjustments in industrial structures are essential if we are to be able to move a large amount of surplus labor power out of agriculture. Leading organs at all levels should focus on providing good services and on assisting and guiding the peasants in making readjustments. They should not complain as soon as a small problem is encountered.

Second, we must separate the purchase of farm and sideline products according to economic laws from the use of administrative measures to obtain farm and sideline products at low prices. A socialist economy is a planned commodity economy based on public ownership. For this reason, we handle affairs according to economic laws and the law of value. The unified purchases and guaranteed sales and the use of administrative measures in the past to obtain farm and sideline products at low prices now is outmoded. Now, agricultural production is also commodity production. We must establish the concept of the commodity economy and handle affairs according to economic laws before we can accelerate the development of commodity production in rural areas.

II. Departmental Work Must Adapt to the New Situation in Commodity Production

In the past, every department assisted agricultural production, and they played an excellent role. For a long period, however, the state has

implemented a policy of unified and assigned purchasing for farm products, and many systems, regulations, and methods used in departments in all sectors are designed to serve it. The situation has changed now, and market regulation of farm products is in effect. We no longer can use the administrative measures of unified and assigned purchases to purchase at low prices. We must use economic methods based on the principle of exchange at equal value to obtain farm products from the hands of the peasants. This will bring new vitality to departmental work, and it also will present departmental work with new challenges. After the elimination of unified and assigned purchasing, we implemented multiple channels of administration. The areas placing the most pressure on departments at the present time are lumber, meat, grain, and other units. They must be dealt with correctly. In the past, the market glut of fattened pigs occurred during May, June, and July. This was the slack season for sales, and everywhere people said it was "difficult to sell pigs." Pig raising has undergone substantial development since unified and assigned purchasing were eliminated. A sample investigation of 37 counties in Hunan shows that there have been increases of more than 20 percent in amounts raised, pigs taken out of inventory, and pigs on hand, and furthermore that there are no problems of "difficulties in selling pigs." Instead, meat departments are facing difficulties. Hunan's meat departments have 58,000 employees and more than 4,768 district and township meat stations. Falling purchases and sales of pigs caused them to lose 32 million yuan during the first quarter of 1985. Purchases and sales in many county, district, and township meat stations are flourishing, however. Qiyang County's meat and aquatic products departments have corrected their professional guiding ideologies and are developing through service. They are writing focusing on administration and actively using their role as a primary channel. By the middle of April, they had signed purchase contracts with the peasants for 102,700 pigs and 10,600 dan of fresh eggs. The system as a whole had a profit of 35,000 yuan during April, up by 7 percent over April 1984. The cadres and employees say that the road of administration was not made narrower by the elimination of unified and assigned purchasing but instead was widened. The situation also was very good when oranges, tea, ramie, and lumber were opened up. Many facts have proven that policy relaxation has brought life to circulation, developed production, and opened up commodity sales.

The current problem is that the situation has changed, but the ideology, work, working style, and methods of some comrades have not changed. They always become upset when a problem arises in commodity production. If there are more goods, they push them away and ignore them. If there are fewer goods, they issue another disguised directive plan and think of methods to use so they can take old routes. As soon as circulation becomes unimpeded, comrades in some departments ignore the over-all situation in favor of their own sectoral interests and set up certification requirements and fee collections everywhere, which seriously obstructs the development of commodity production. The time has come to resolve these problems.

III. Strengthen Leadership, Provide Good Services

If we wish to strengthen leadership over rural economic work, leading comrades at all levels must have a correct understanding of the rural economy

that is in the process of transition. They must establish a view of commodity production, learn to manage affairs according to the law of value, be resolute in reform, and open up paths for progress. Three problems remain to be solved in guidance of rural work at present:

First, there should be further readjustments in rural industrial structures according to market demand. Although we have made an effort to grasp this work in the past 2 years, it should be noted that we have just begun and that the problem of irrational industrial structures is far from solved. The starting point of all our policies should be to develop the planned commodity economy and develop the social forces of production. The essence of our work is to allow the peasants to become prosperous as quickly as possible.

Second, we should do good service work for development of commodity production. Many of the economic management systems and management regulations currently in place were established under conditions of self-sufficiency and semiself-sufficiency, a very low level of the forces of production and very underdeveloped commodity production. Now, they are not suited to the development of things and should be reformed. The first thing is to move from the past method of reliance primarily on administrative measures to manage the economy to one of reliance on administrative measures to direct economic activities. The farm products needed by the state and state-run industries should be dealt with on a national scale. The second is that the past method of pushing along cultivation and planting should be changed to providing good services for the development of commodity production. All sectors and activities should establish an ideology of serving the rural commodity economy and providing services for the basic levels. They should take the initiative in providing good services in the areas of production, sales, shipping, storage, capital, technology, information, and so on, and gradually establish a perfect service system. Reform regulations unsuited to the development of commodity production do not permit government to have its hand everywhere or allow everyone to act as they please, which harms the peasants' interests. The third is to direct the cooperative economy to organize its own service work. Various types of economic associations have appeared during the process of rural economic development, and they can live and develop only if service work keeps pace. Shangfeng Township in Hengyang County has six peasant households who voluntarily organized a pig-raising association in 1983. They adopted the methods of unified materials supplies, unified transport and sales, livestock raising by households, and accounting by categories, they signed contracts with credit cooperatives, veterinary stations and feed mills, and they actively participated in serving the peasants in the association in capital, technology, epidemic prevention, feed, sales, and other areas and expanded the scale of production. This association was expanded to include five townships in 1985 with 72 villages and 722 households. This provides us with a very important experience, which is that decentralized production, centralized services, and integration of individual initiative with the advantages of collectives to form new forces of production may be a new route for future development of the rural economy.

Third, we should adhere to the working style of seeking truth from facts. The over-all situation in our work at the present time is good, but it cannot be ignored that blind pursuit of speed, boastful statements and falsehoods, exaggerations, superficial accounts, and window dressing have appeared in some areas, and that even the issuance of arbitrary orders has occurred in some places. This definitely deserves our vigilance. With the excellent new situation, we should strive to advocate diligence and conscientiousness, doing things in a down-to-earth manner, seeking truth from facts, encouraging honesty and zeal, doing honest things and speaking honestly, and we should discuss effective and good working styles to oppose resolutely the working style of deception, falsehood, and seeking honor through fraud and deception. Only in this way can economic results and the pace of development be adjusted so that the rural economy develops in a sustained, stable, and healthy manner.

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CSO: 4007/37

HUNAN

BRIEFS

HUNAN SURVEYS LAKE DONGTING--According to HUNAN RIBAO, after spending two years, the province had made achievements in the comprehensive survey of the area of Dongting Hu. The area of fish collection during the rainy season is 250,000 square kilometers, accounting for 14.5 percent of the whole Changjiang basin. The epigenetic underground water is about 462 cubic meters. There are 30 embankments and 2.4 million mu of arable land, which accounts for 26 percent of the province's total area of arable land. In addition to being rich in grain, salt, oils, hemp, silk, tea, sugar, vegetables and fruits, the area has 260 varieties of medicinal plants, 281 varieties of plants for industrial use and 174 varieties of edible plants. The lake also has 111 varieties of fish. [Summary] [Changsha Hunan Provincial Service in Mandarin 2300 GMT 30 Oct 85] /9599

CSO: 4007/85

JIANGSU

JIANGSU PEASANTS PROSPERING THROUGH REFORMS

OW110334 Beijing XINHUA in English 0319 GMT 11 Nov 85

[Text] Nanjing, November 11 (XINHUA)--The average income of peasants in Jiangsu Province will rise 10 percent from 1984 to about 493 yuan per person this year, according to the provincial statistics bureau.

Each rural resident received an average of 448 yuan in net income last year, more than double the 1980 figure, a bureau official said here.

The target of 350 yuan for per-capita income set for the Sixth Five-Year Plan, which ends this year, was reached two years ago.

Covering 100,000 square kilometers and with a population of 62 million, Jiangsu is one of the most economically-developed parts of China.

The official said the province produced the highest industrial and agricultural output value in the country. It was China's second largest grain producer after Sichuan Province.

Between 1980 and 1984, the income of each rural inhabitant increased at an average annual rate of 19.8 percent, or 57.5 yuan. This compared with an annual rate of only 3.5 percent, or five yuan, from 1954 to 1980.

The number of peasant families with an annual per-capita income below 300 yuan dropped from 80.7 percent of the province's total in 1980 to 18.7 percent last year.

During that period, households with an annual per-capita income of more than 500 yuan soared from only 1.5 percent to 35.6 percent of the total.

In addition, the gap of earnings between urban workers and peasants has been reduced considerably. Last year, each peasant earned two-thirds of a worker's income on average, compared with only half in 1980.

The official attributed the sharp increase in peasants' earnings to the introduction of the responsibility system, which links financial reward to effort, and the rapid expansion of rural industries and household-based production.

These reforms, introduced since 1979, have increased the number of rural families undertaking specialized production to 289,000--2.2 percent of all Jiangsu's peasant families. Such households earn 80 percent more than other rural families on average.

Each rural resident received an average of 62.4 yuan in income, or 14 percent of total earnings, from township-run enterprises last year--up from only 18.2 yuan in 1980.

Three-quarters of the extra per-capita income earned between 1980 and last year was a direct result of household-based farming and sideline operations.

The rest came from higher state purchase prices for farm products, the official said.

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CSO: 4020/89

JIANGSU

GREATER USE OF PHOSPHATIC FERTILIZER URGED

Nanjing XINHUA RIBAO in Chinese 28 Aug 85 p 2

[Commentary by Li Qingkui [2621 1987 6652] and Jiang Baifan [5592 2672 5672]: "The Soil in Jiangsu Needs More Phosphatic Fertilizer"]

[Text] In the past few years the use of phosphatic fertilizer in Jiangsu has developed from a situation in which supplies were inadequate to meet demand to one in which the product is all but unsaleable. The causes that have brought this about are multifaceted. Some people believe one reason for this is that, due to the over-application of phosphatic fertilizer in the past, there is now no need to apply phosphatic fertilizer in order to increase crop yields. We believe the situation to be otherwise.

There are approximately 70 million mu of cultivated land in Jiangsu, on which are great disparities between levels of soil fertility. Even in Suzhou Prefecture, which is famous for its rich soil, about half of the soil area is deficient in phosphate. Of this, the most marked phosphate deficiency is in belozem soils. The application of phosphatic fertilizer on this kind of soil has obvious results in increased yields. In northern Jiangsu, extremely limy, barren soil is scattered all over the area. Recently, general survey data indicate (as for example in Huaiming Prefecture, where about 60 percent of the land area throughout the prefecture is deficient in phosphate and the majority of the soil has a phosphate supply level below the critical level) that phosphatic fertilizer has become a limiting factor in increased crop yields. These extremely limy soils and the southern highly acidic soils are alike in their notable phosphate fixing capability. Trials conducted in Xiangshui County indicate that when phosphatic fertilizer is used continuously for 10 or more seasons there is a marked increase in crop yields. Of course, after phosphatic fertilizer is applied to the soil a considerable quantity of phosphorus is retained therein, so benefits in increased yields after successive applications will be less marked than after the initial application. However, in order to ensure high, stable crop yields, the portion of nutrients that crops remove from the soil each year must be replenished. If we calculate based on a figure of 800 jin/mu in average annual grain yield for Jiangsu, then approximately 8 jin/mu of phosphorus pentoxide is removed from the soil each year. Approximately 280,000 tons of phosphorus pentoxide is used to replenish Jiangsu's 70 million mu of cultivated land. This means we need about 2,240,000 tons/year of

superphosphate (calculated based on the 12.5-percent phosphorus pentoxide content of superphosphate).

There is also concrete data from abroad for reference on this point. For example, England also has limy soil and already has a fairly long history of phosphatic fertilizer application. The level of phosphate supply in this soil is much higher than it is in northern Jiangsu's limy soil, and each year it yields an average of 680 jin/mu of wheat, but the English still apply more than 8 jin/mu annually of phosphorus pentoxide. Paddy land in Japan yields an average of 758 jin/mu (1982 figures), but the quantity of phosphorus pentoxide applied each year nevertheless averages as much as 20 jin/mu. By contrast, in 1984 the quantity of phosphorus pentoxide applied in Jiangsu averaged 5.5 jin/mu. From this it is obvious that application of phosphatic fertilizer in Jiangsu is not excessive, rather it is insufficient.

Indeed, the apparent reaction of crops to phosphatic fertilizer is not as obvious as it is to nitrogenous fertilizer, and this also causes people to neglect the application of the former. In reality, nitrogen and phosphorus also incorporate other essential nutrient elements that are of equal importance to crop physiological functioning, and for which there are no substitutes. Lack of phosphorus for the crops frequently leads to impeded growth and development and declining yields. If nitrogen and phosphorus are in balance the crops will have deep roots and luxuriant foliage. If there is a lot of nitrogen and very little phosphorus, or vice versa, one will get half the result with twice the effort. From a national perspective the quantity of chemical fertilizer applied in Jiangsu is fairly high, but it is predominantly nitrogenous fertilizer. The ratio of nitrogen to phosphorus always fluctuates between 1 to 0.2 and 1 to 0.3. From the perspective of this data the quantity of phosphatic fertilizer applied is still comparatively small. In 1983 the departments of agriculture and chemical industry discussed this fact and hoped to bring the ratio of nitrogen to phosphorus up to 1 to 0.5.

There cannot be any notable expansion of cultivated land in Jiangsu, so if we wish to increase grain production we must raise the per-unit-area yield by making rational applications of chemical fertilizers and improving crop varieties and farming methods. In this respect Jiangsu still has great potential for increasing production. For example, national paddy production averages 614 jin/mu (1982 figures)--though at its highest it can reach 1,606 jin/mu--and the highest paddy yield abroad is 2,368 jin/mu. In Jiangsu paddy yield is 767 jin/mu. Nationwide wheat yields average 304 jin/mu and can reach a high of 1,918 jin/mu, whereas in Jiangsu they average 505 jin/mu.

Based on the above argument, since the soil in Jiangsu needs phosphatic fertilizer, and since even more is necessary if we are to increase yields by a large margin, why is phosphatic fertilizer unsaleable and overstocked? We believe that the causes are really multifaceted, but the major requirement is for the industrial sector producing phosphatic fertilizer to improve the quality of its product. We hope it will do its best to produce effective phosphatic fertilizer that is high in phosphate content, has good physical properties, and is reasonably priced. At the same time it should overhaul those phosphatic fertilizers produced by nonstandard technological processes. In the past, farmers did not clearly understand the question of quality, but

used highly effective compound ammonium phosphate fertilizers composed of 46-percent phosphorus pentoxide and 18-percent nitrogenous elements, and they spared neither expense nor market competition to purchase them. This demonstrates that the problem is not that farmers do not want phosphatic fertilizers, rather it is that they do not want inferior quality, high-priced phosphatic fertilizers. Therefore, we suggest that the current overstocks of phosphatic fertilizers should be "priced according to quality." That is, a reasonable price should be fixed based on the effective quantity of phosphatic elements so that the farmers suffer no losses. At the same time, we must explain this point to the farmers and invite them to supervise its execution. In this way, low quality will be accompanied by low price and vice versa, so the farmers will not feel they are getting the worst of things and will be willing to buy phosphatic fertilizer.

It should be pointed out that low quality phosphatic fertilizer is unsuitable for long-distance transport and thus should be applied close by insofar as that is possible. Otherwise this will also increase the burden on farmers. In crop rotation between paddy and dry land, phosphatic fertilizer should be applied primarily on dryland crops. This will improve economic results from the use of phosphatic fertilizer.

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CSO: 4007/15

JILIN

GROWTH IN LIVESTOCK INDUSTRY

Changchun JILIN RIBAO in Chinese 17 Aug 85 p 1

[Article: "Rather Substantial Growth in Livestock and Poultry in Jilin in 1985--Readjust Industrial Structures, Strengthen Service System Construction"]

[Text] Animal husbandry production in Jilin Province has broken out of the situation of fluctuation and no advance this year, and there has been a substantial increase in all types of livestock and poultry. The situation in the number of livestock and poultry on hand compared with the same period in 1984 was that pigs were up by 27.1 percent while large draft animals were up by 12.8 percent, including increases of 22 percent in oxen, 6.1 percent in sheep and 93.8 percent in poultry.

Comprehensive growth in the animal husbandry industry in Jilin is the result of intensive implementation of CPC Central Committee Circular No 1 (1985) and the readjustment of industrial structures. In the new situation of an improved grain situation and developing rural commodity production throughout Jilin, the provincial CCP Committee proposed in the fall of 1984 that, while not relaxing in grain production, there should be adaptation to local conditions to develop the focus of agriculture for great efforts to develop animal husbandry and convert most surplus grain into meat, eggs and milk. The Fourth Session of the Third Plenum (Enlarged) of the Jilin CPC Committee made a further call for readjustments in rural industrial structures and for the achievement of breakthroughs in the area of grain conversion, development of animal husbandry, and rural and small town enterprises. The focus should be on pig raising and the breakthrough point should be in chicken raising to promote comprehensive development of animal husbandry. In the readjustment of rural industrial structures, animal husbandry should receive attention and strengthening in the areas of guiding ideology, work tasks and production measures, and in manpower, material and financial resources to bring on a high tide of poultry, pig, cattle and sheep raising throughout Jilin.

The new economic policies have motivated the initiative of the masses to develop animal husbandry. Assigned purchases of live pigs were eliminated this year as fixed purchases and multichannel administration

were implemented. Buying and selling prices have been relaxed and the economic benefits to the peasants from pig raising have been improved, which has promoted the development of pig production. The number of breedable sows now has reached 620,000 head, up by 66.7 percent over the same period in 1984. The number of breeding boars has reached 22,000 head, a one-fold increase. The construction of service systems surrounding animal husbandry commodity production has been strengthened in such areas as extension of improved varieties, feed supplies, epidemic prevention and disease elimination and other areas. The 2,050 feed processing plants (and sites) planned for 1985 now are under construction. Jilin now has set up a five-level epidemic prevention network for the province, cities, counties, townships and villages that has more than 8,000 epidemic prevention personnel. Some 74 of Jilin's 980 rural and small town animal livestock veterinary stations now have developed comprehensive administration and they are providing pre-production, in-production and post-production services. The improvement in service work has brought about the rapid development of specialized breeding households from 23,000 households in 1984 to 81,000 households this year.

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CSO: 4007/38

JILIN

JILIN MAKES MARKED PROGRESS IN AGRICULTURAL PRODUCTION

SK070415 Changchun Jilin Provincial Service in Mandarin 2200 GMT 6 Nov 85

[Text] On the premise of vigorously increasing economic results during the implementation period of the Sixth 5-Year Plan, our province has shown a steady and stable increase in agricultural production and generally prefulfilled the major agricultural targets set forth by the Sixth 5-Year Plan. By the end of 1984, the province realized 8.94 billion yuan of total agricultural output value and overfulfilled the target set forth by the Sixth 5-Year Plan by 29 percent, owing a yearly average increase of 6.6 percent. Agricultural production of the province has surpassed the demand of the Sixth 5-Year Plan and has shown a yearly average increase of 5 percent over the past 5 years. By the end of 1982, the province fulfilled the minimum grain output target set forth by the Sixth 5-Year Plan, and by the end of 1983, it overfulfilled the maximum target in this regard. The province has basically fulfilled the plans set forth by the Sixth 5-Year Plan for oil-bearing seeds and flue-cure tobacco and prefulfilled by 1 year the plans set forth by the Sixth 5-Year Plan for draft animals, hogs, aquatic products, and afforestation.

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CSO: 4007/85

JILIN

BRIEFS

FEED PROCESSING CAPACITY GROWS--Jinin has built more than 4,700 feed processing plants, increasing its feed processing capacity to one million tons. Development of Jinin's feed processing industry is characterized by cooperation among the state, the collective and the individual, the integration of small, medium and large businesses, the accumulation of funds through a variety of channels, and unity among the various administrative levels. [Text] [Beijing NONGMIN RIBAO in Chinese 9 Sep 85 p 2] 13063/13045

CSO: 4007/459

NEI MONGGOL

NEI MONGGOL'S ZHOU HUI ADDRESSES BEET TRANSPORT DIFFICULTIES

SK080128 Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 2 Nov 85

[Text] With the assistance of major party and government leading persons and relevant departments, Bayannur League was able to resolve its difficulty in selling and transporting its more than 200 million jin of surplus beets. Peasants throughout the league were thus able to avoid a loss totaling more than 6 million yuan.

As a major beet production base of our region, Bayannur League abounds in fine quality beets. Beet output reached more than 1.4 billion jin last year. This year the contract purchasing system has been applied to beet production. The Baotou, Linhe, (Wuyun), Hohhot, Dengkou, and (Baiyanfa) sugar refineries have contracted to purchase 1.5 billion jin of beets. Because peasants failed to fully adjust to the contract purchasing system put into effect recently and the practice of readjusting agricultural production according to market demands, blind production has appeared, to a certain extent. The league planned to grow 310,000 mu of beets, but the actual acreage exceeded 380,000 mu, and beet output reached nearly 2 billion jin, 500 million jin more than the contract purchasing quota. To counter the situation of a great amount of surplus beets, leading persons of the Bayannur League CPC Committee and Commissioner's Office and various banners and counties actively contacted relevant refineries. Linhe and Baotou sugar refineries and other refineries which had signed purchasing contracts, eager to meet the needs of peasants, tried their best to expand production capacity and purchased another 200 million jin of beets. Because the remaining 200 million jin of beets could not be marketed within the league, leading persons of the Bayannur League CPC Committee and Commissioner's Office again vigorously made contacts with refineries outside the league.

Major leading persons of the regional CPC committee and government including Comrades Zhou Hui and Bu He, also helped in resolving the difficulty in transportation. The Hohhot Railway Bureau also rendered great support by allocating another 1,000 wagons. In this way, the difficulty in selling and transporting the surplus beets was basically resolved.

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CSO: 4007/85

QINGHAI

QINGHAI LEADERS, MINISTER VISIT FERTILIZER BASE

OW102012 Beijing XINHUA Domestic Service in Chinese 0235 GMT 10 Nov 85

[Text] Xining, 10 Nov (XINHUA)--In order to speed the development of potash fertilizer ore abundantly found in Qinghai, Wang Min, vice minister of chemical industry, and Governor Song Ruixiang and Vice Governor Wu Chengzhi of Qinghai jointly held office at the construction site in the Qarhan Salt Lake in the Quidam Basin and, together with engineers of the survey, design, research, and construction units, earnestly investigated and studied problems urgently to be solved for the construction of the Qinghai potash fertilizer plant.

After years of preparation, the conditions are ripe for starting the construction of the Qinghai potash fertilizer plant, the first potash fertilizer complex in China. The construction of this engineering project is of great significance for developing China's largest deposit of potash-magnesium ore in the Qarhan Salt Lake; restructuring the ratios of nitrogen, phosphorus, and potassium in the chemical fertilizer industry; and promoting agricultural development in our country. However, due to unfavorable natural environment and difficult construction conditions, the construction of the Qinghai potash fertilizer plant has encountered a number of practical problems. In line with the principles of "short construction period, good engineering quality, economical investment and high economic efficiency," the leaders from the ministry and the provincial government decided at the construction site a plan for instituting the system of investment responsibility and for completing the project in 3 years starting from next year.

In order to strengthen the leadership and management of this major capital construction project, the ministry and provincial leaders also decided at the construction site to set up a coordinating and leading group jointly formed by Qinghai Province and the Ministry of Chemical Industry as well as an on-the-site headquarters for implementing the measures to protect the salt lake resources, define the responsibilities of departments concerned under the provincial government and the ministry, and arrange the supply of materials and equipment.

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CSO: 4007/85

SHAANXI

WHEAT PROCUREMENT WORK COMPLETED EARLY

Xi'an SHAANXI RIBAO in Chinese 13 Aug 85 p 1

[Article by the Shaanxi Province Grain Bureau News Group: "Shaanxi Province Completes Fixed Wheat Purchase Tasks Ahead of Schedule--Counties (Cities) That Already Have Completed Their Tasks Began To Open Up Wheat Markets on 10 August"]

[Text] By 10 August, Shaanxi Province already had completed fixed wheat purchase tasks of 1.886 billion jin 2 months ahead of schedule. An additional 400 million-plus jin of wheat has been warehoused compared with the same period in 1984. Five of Shaanxi's 10 prefectures and cities--Weinan, Xianyang, Xi'an, Tongchuan and Baoji--have exceeded fixed purchase tasks. The speed and increased amounts of wheat purchases are unprecedented.

This was the first year in which the state eliminated unified purchase of grain and implemented contractual fixed purchase. Since the spring, all levels of government in Shaanxi have organized grain departments to go down into the villages to sign fixed grain purchase contracts with the peasants. Based on the needs of the state, the masses of peasants have focused on grain production and achieved an excellent summer grain harvest in their struggle against low temperatures, drought, wind, hail, insect pests and other natural disasters. After the summer grain harvest, the peasant masses conscientiously adhered to the contracts and actively sold to the state. Grain purchasing departments have changed their old method of sitting in the stations and making purchases that they used in the past and have gone down to the villages to open the door wide on purchasing. Banks, industrial and commercial administrations, public security departments and purchasing departments have been matched closely, which has greatly accelerated progress in warehousing. By 10 August, all those counties and cities that had completed fixed wheat purchase tasks had opened up wheat markets.

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CSO: 4007/38

SHAANXI

BRIEFS

AMPLE CHEMICAL FERTILIZER SUPPLIES--For the first time in many years, the first half of this year brings some new changes in the fertilizer market in Shaanxi Province. The notable characteristics are many supply channels, flexible management styles, and ample supply sources which allow somewhat of an alleviation in the disparity between supply and demand. The peasants' requirements for chemical fertilizers are low prices, good quality, and multiple nutrients. In the past, peasants needed ration coupons, which made it difficult to buy fertilizer. Now, selective purchasing can be done with money and only when the need arises. For plan-priced urea and compound fertilizers, the gap between supply and demand is fairly large. The sale of fast-acting chemical fertilizers and ammonium carbonate from January to April was not brisk, but entering into June, it picked up some momentum. Mined phosphate fertilizer remained overstocked. There was a sharp increase in commercial inventories which tied up too much capital and greatly reduced the profit margin. Statistics show that from January to June, acquired purchases of chemical fertilizers decreased by 24.25 percent compared with the same period last year. The transfer of fertilizer from other provinces increased by 122.17 percent compared with the corresponding period last year. Net sales increased 0.8 percent compared to the same period last year, and by the end of June, stocks had increased by 63.63 percent over the previous year. Looking at the sales organization of chemical fertilizers, the sales of nitrogen and phosphates tended to decrease, while the sales of compound fertilizers have increased. Observing the variety of nitrogenous fertilizers sold, there was more urea, (primarily the fast-acting variety), and less ammonium carbonate. Starting from June, sales of chemical fertilizers have picked up. It is predicted that except for ammonium nitrate, nitrogenous fertilizer sales will turn around and improve in the third quarter. [Text] [Beijing NONGMIN RIBAO in Chinese 8 Aug 85 p 2] 13113/12955

CSO: 4007/457

SHANDONG

DEVELOPMENT OF SHANDONG AQUATIC PRODUCTS INDUSTRY

Beijing NONGMIN RIBAO in Chinese 9 Sep 85 p 1

[Article by Yan Zengbao [1693 1073 1405]: "Aquatic Products Breeding Industry in Shandong Developing New Momentum; Province's Prawn Breeding Acreage Exceeds 250,000 Mu"]

[Text] Shandong derives a great amount of income from fish and shrimps. In the first half of their year, the province's fresh-water aquaculture grew by 300,000 mu over the same period last year, equalling the total growth for the last 5 years combined. Prawn cultivation acreage exceeded 250,000 mu, an increase of more than 50 percent; the breeding of valuable seafoods such as scallops, sea cucumbers and so on all showed considerable growth.

Shandong's great economic strength is its abundance of aquatic resources. Last March, comrade Hu Yaubang addressed the leadership of the Shandong provincial government: "The Jiaodong Peninsula is surrounded by several hundred thousand square kilometers of sea, which is larger than Shandong province's acreage, and which should be developed for breeding aquatic products." This speech further defines the importance for the various levels of leading organizations of developing the aquatic products industry. In Huimin Prefecture agricultural low-interest-rate loans were used to focus on developing aquatic products during the first half of the year, four stocking farms were built, sea cultivation acreage was increased more than 8,000 mu, and inland water which can be used for breeding aquatic products has been completely contracted out. After laying dormant for several thousand years, the beach area along the coast of the Yellow River delta and Caizhou Bay has been built up with 20,000 mu of shrimp ponds during one year. Yantai City has organized labor transfer to the ocean. Within 2 or 3 years, there will be one-third of labor "putting out to sea", which will increase the fishery work force to one million people from the current 100,000. In Yantai's Changdao County, more than 90 percent of the labor is engaged in fishery production. The marine breeding area of the county reached 29,000 mu this year, an increase of 5,000 mu over last year; and every fisherman owns as average of one mu of "sea-field". Last year, the county's average per-capita income from breeding was 380 yuan; this year its income will more than double, and if income from catching is included, it will reach 1,000 yuan.

Another reason for the rapid growth of Shandong's aquatic breeding industry is that rights and permission for breeding aquatic products on 200 million-plus mu

of beach area which are fit for breeding have been granted to villages and households, so that peasants are contracting to manage the water, resulting in a craze for breeding the likes of which has never been seen before. By the end of July, there were more than 50,000 households specializing in aquatic products throughout the province; in the newly developed water areas, more than half of the industry is managed by partnerships of specialized households and cooperatives.

During this time of great development in marine and fresh-water aquaculture, Shandong's aquatic products refrigeration industry also has attained a certain level of development. Last year, the entire province processed over 200,000 tons of more than 300 varieties of aquatic products; aquatic products processing increased more than 200 million yuan in value. More than 80 new refrigeration warehouses have begun operations this year, increasing refrigeration capacity by more than 18,000 tons.

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CSO: 4007/459

SHANDONG

SHANDONG HAWTHORN CROP UP 20 PERCENT OVER 1984

OW121242 Beijing XINHUA in English 1201 GMT 12 Nov 85

[Text] Jinan, November 11 (XINHUA)--Shandong, China's major hawthorn producer, picked 35,000 tons this year, nearly 20 percent more than in 1984, according to local officials.

About 100 plants can yield some 500 kg of the fruit. The 67 hectares of close-planted orchards in Feixian County yield an average of 8,805 kg per hectare.

Shandong has 50,000 hectares of hawthorn bushes, its output accounting for about half of China's total.

The fruit is rich in vitamin C and is believed to stimulate the appetite, help digestion, soften blood vessels and reduce blood pressure. Haws are processed into juices, jellies, pills and wine, and are also canned.

The hawthorn cultivation goes back 3,000 years in China.

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CSO: 4020/89

SHANGHAI

SHANGHAI MAYOR ADDRESSES VEGETABLE SUPPLY MEETING

OW281217 Shanghai City Service in Mandarin 2300 GMT 26 Oct 85

[Excerpt] A good job in vegetable production and supply is not only an economic task but also a political one because vegetable supplies in a big city has a direct bearing on its residents' livelihood and stability. This is a guiding principle for concerned leaders at various levels set by the municipal government at a recent vegetable work meeting.

Mayor Jiang Zemin attended and spoke at the meeting. Vice Mayor Ye Gongqi made a work report. Attending the meeting were county and township cadres in charge of vegetable work and cadres from commercial departments, as well as responsible persons of concerned municipal commissions, offices, bureaus, and districts, totalling some 400.

In his speech, Mayor Jiang first confirmed the excellent agricultural and economic situation in the suburban counties of the municipality, and stressed the great importance of developing agriculture for promoting construction in cities. He said: As Comrade Rui Xingwen emphatically pointed out in his speech at the municipal award meeting for outstanding projects in agricultural science and technology, all the suburban counties must strive to be self-sufficient in grain and capable of serving the municipality. Presently, it is necessary to help the cadres and masses to further understand the importance of developing agriculture, including the production of vegetables and other nonstaple foods, and to correct those ideas that belittle agriculture.

He added: It is necessary to pay close attention to the scale and efficiency of growing vegetables by promoting specialization and improving the service system. In order to boost production, it is also necessary to adopt a series of policies and measures arousing the enthusiasm of the masses.

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CSO: 4007/76

SICHUAN

SICHUAN RIBAO DISCUSSES DROP IN GRAIN OUTPUT

HK230245 Chengdu Sichuan Provincial Service in Mandarin 0030 GMT 23 Oct 85

[SICHUAN RIBAO Reporter's commentary: "The Province's Rural Economy Has Become Still More Lively and Prosperous in the Course of Reform"]

[Text] The commentary says: Although the province's grain production has declined this year, the readjustment of the rural production structure has promoted the development of commodity production, improved economic results, and increased the peasants' income. The rural economy is more lively and prosperous. The entire rural situation is good.

The commentary says: Although the province's grain output is below last year's, there have been big increases in production of industrial economic crops, with the exception of cotton. According to the estimates of the departments concerned, per-capita income in the rural areas will rise by about 30 yuan over last year. Viewing the situation as a whole, the orientation in readjusting the rural production structure is correct and the entire rural situation is good.

Some comrades cite the drop in grain production, compared with last year, to declare that readjustment of the rural production structure is a mess. They lack a correct view of the rural situation and take an attitude of doubting and negating the second stage in rural reform and the continued readjustment of the production structure. The results of investigations carried out in the rural areas by responsible party and government comrades of provinces and of a number of prefectures, cities, and counties show that this view and attitude are wrong.

There are many factors for the decline in grain production. For instance, last year over 1 million mu of farmland were occupied for other purposes. There was insufficient production capital in the spring. The prices of agricultural production materials rose. As a result some peasants had little enthusiasm for growing grain. In some places leadership over agricultural production was relaxed for a time. Natural disasters also made an impact, and so on.

Much of the reduction of the grain area carried out in the course of readjusting the rural production structure this year was correct. In normal circumstances, the shortfall could be recouped through increasing the yields. This has been achieved in some places. Due to lack of experience, blindness and one-sidedness appeared in work in certain places where the grain area was reduced to an excessive degree and the shortfall could not be recouped through increasing the yield. This is a side current. It is not realistic to blame the drop in grain production on the readjustment of the rural production structure.

The commentary says: Although the province's grain production declined this year after increasing for 8 successive years, this was still a year of high output, and the overall situation will not be affected. Grain production showed a big drop in some places. So long as readjustment and supply work is done well there, this problem can be solved.

Hence, it is essential to have a correct view of the current rural situation and realize that the main current of the readjustment of the production structure is good. We must not be panic-stricken over the grain issue, nor can we view it lightly. Still less can give up eating for fear of choking, take an attitude of doubting and negating the second stage of rural reforms, put a stop to readjusting the rural production structure, and even go back to the old road of single-product economy. Instead we must seriously implement the provincial CPC committee's guideline of providing appropriate guidance and continue to do a good job in readjustment. In particular, we must at present strengthen education in regarding agriculture as the foundation of the national economy and in not neglecting grain production in the slightest. We must do our work in a thoroughly sound way and guide the peasants to stabilize the area of spring-harvested grain crops at this year's level and ensure steady growth in grain output next year.

/9604
CSO: 4007/76

SICHUAN

ACCELERATING FEED INDUSTRY CONSTRUCTION

Chengdu SICHUAN RIBAO in Chinese 30 Aug 85 p 2

[Article by Tan Xiaotao [6223 1420 3447] and Wang Jinhung [3769 3160 3163]
"Accelerate Feed Industry Construction and Adapt to the Great Development
of the Livestock Industry"]

[Text] Developing animal husbandry is one of the keys to readjusting Sichuan's rural industrial structure. Accelerating the construction of our province's feed industry is critical to expanding animal, poultry and fish production, promoting grain conversion and multiple processing of agricultural sideline products.

Sichuan is one of the nation's primary grain and edible oils production centers, possessing a preponderance of rich natural resources for developing the feed industry. In 1983, the amount of feed grain used in the province reached 12.2 billion jin, and it will increase every year. Green fodder and coarse feed grain resources are also very abundant. According to the present state of green fodder and coarse feed grain resources, every year 170 billion jin can be supplied. Proteinaceous raw materials are even more abundant. Our provincial foodstuff, brewing, sugar refining, wine-making, oil extraction and such industries all have a considerable quantity of residual materials. Our provincial chemical and pharmaceutical industries produce not only large quantities, but also all types of minerals, vitamins, antibiotics, amino acids, anthelmintics, etc, which provides good conditions for the feed industry. At present, how to utilize these resources is a pressing task facing the Sichuan fodder industry sector.

To use compound feeds in undertaking scientific feeding is the direction of animal husbandry development. According to the Ministry of Agriculture, Livestock and Fishery Department's initial planning, the development of our provincial livestock, poultry and fish production annually increases the demand for compound feeds. Based on the concerned departments' previous estimates, according to the 1983 total amount of poultry, livestock and fish raised, if all were to implement compound-feed scientific rearing, by the year 1990, approximately 36.5 billion jin would be needed. Currently, while the entire province only produces several billion jin annually, this clearly indicates that the outlook for our province's fodder industry is very expansive and that we must attend to the matter carefully, promptly, and well.

Since getting off the ground in 1979, Sichuan's fodder industry, under the jurisdiction of the grain and animal husbandry departments and township and town enterprises, grew to more than 700 feed and feed additive factories and locations of various kinds by the end of 1984. In 1980, the total provincial production of mixed feed was 150 million jin, reaching 1.7 billion jin by 1984, moving it into sixth place nationally. However, the present situation of our provincial feed industry compared with the quantity of poultry, live-stock and fish raised in the province shows that its development is somewhat slow and still showing a large gap. Pork production in our province is 17 to 20 percent of the national total, while the amount of feedstock produced and sold currently is only about 9 percent of the national amount. The provincial amount of mixed feed as part of the proportional weight of feed concentrate consumed is also less than the national average level. According to statistics, the amount of grain used in mixed feed only amounts to 5 percent, with the remaining 95 percent of the feed grain used directly in raising. The large quantities of residual materials from agricultural by product processing, foodstuffs, brewing industries, etc, are little used. For example, only 50 percent of silkworm pupa, 20 percent of rice chaff and wheat bran, 17 percent of fish meal and 10 percent of bakery goods are used. The utilized portion of distillers grains also is not high.

Other than questions currently involving the system of organization, capital, equipment, technology, storage and scientific research, the problems facing production and consumption are especially worth attention as reasons for our Sichuan's comparatively slow feed industry development. Within the province, current production is mostly pig and chicken feed. For dairy cows, sheep, fish, ducks, etc, not only are the feed varieties few, but the production is small and cannot satisfy various rearing requirements. Some enterprises misuse rice chaff, yam husks and wheat bran, resulting in a decrease in the energy concentration and a reduction in the protein and mineral components of the mixed feed produced, thereby impairing the product quality. The sale of mixed feed in our province at present primarily relies on the business enterprises' own sales, entrusting grain distribution centers and individual units as sales representatives. Network points are few, transportation is difficult, it is inconvenient for peasants to purchase, and the negotiated price of mixed feed is also on the high side. In addition, in this province, supplies are very tight for supplying wheat bran and proteinaceous raw materials and dried blood which are the largest components used in the production of mixed feed.

The "Program for National Feed Industry Development" plans that the proportion of weight of mixed feed produced as a part of total feed concentrate will grow from 10 percent presently to 40-50 percent by 1990. Given Sichuan's actual situation, in order to realize this goal we must first expand production capability. We must adhere to the policies of a unified plan, national distribution, a combined effort by state-owned enterprises and collectives, development of all large, medium and small business units, with the medium and small units given primary emphasis, and accelerating the construction of planning units. Currently, although production capability has not been formed, there are already minority regions and the Penzhou Mountain area with construction conditions present so that a series of small-scale factories

and locations should soon be build to compete with the county feed industries throughout the province. In the cities and counties with an established base, we should concentrate on making technological improvements, construction integration, and promoting product quality and variety.

In rationally arranging the direction of production, within the province's foodstuff and livestock channels, the factory mechanization levels are high and the technical capacity is considerable, so we can focus on producing high and middle-grade feed, condensed feed and additives. For feed enterprises and feed specialized individual households in towns and rural areas, raw materials and semi-finished products can be supplied. Feed industry departments can also establish farms to raise chickens, ducks, lean-meat pigs, and combine high quality mixed feed, animal hybridization expansion, scientific rearing, and immunological methods into an integrated whole to stimulate development of the feed industry. In management operations, we should strive to lower costs, and reduce profits for increased sales. In addition, we should increase the network locations, expand propaganda and open more markets. In this way, the backward state of Sichuan's feed industry can rapidly be changed.

13113/12955
CSO: 4007/457

SICHUAN

PEASANT INCOMES INCREASE

Chengdu SICHUAN RIBAO in Chinese 13 Sep 85 p 2

[Article: "Peasant Incomes Increase, Consumption Structures Change--An Income and Expenditure Survey of One Hundred Peasant Households"]

[Text] The Sichuan Provincial Agriculture Office recently collated data on a survey of income and expenditure conditions in 100 peasant households done during the first half of 1985. The following changes were noted in comparison with data from a survey of 60 peasant households during the same period in 1984.

1. Productive Income Increased, Structural Changes Occurred

Cash income from productive activities in the 100 peasant families during the first half of 1985 averaged 145.30 yuan per capita (not including income from savings loans and other types of loans), a per-capita increase of 18.5 yuan or 14.6 percent over the same period in 1984. The increase was most apparent in construction, transportation and productive labor services, with per-capita incomes of 24.49 yuan, up by 45.8 percent over the same period in 1984. Per-capita income in commerce and services was 8.23 yuan, up by 49.4 percent over the same period in 1984. Income from sales of agricultural products averaged 98.11 yuan per capita, up by 8.9 percent over the same period in 1984.

The faster rate of growth in tertiary industries compared to primary and secondary industries also led to proportional changes in peasant incomes. The average per-capita income from primary industries (agriculture, forestry, animal husbandry, sideline production and fisheries) during the first half of 1985 was 96.87 yuan, up by 10.4 percent over the same period in 1984. Average per-capita income in secondary industries (mainly the construction industry) during the first half of 1985 was 6.51 yuan, up by 9.8 percent over the same period in 1984. The average per-capita income in tertiary industries (transportation, labor services, commerce, food and beverages, services, etc.) during the first half of 1985 was 27.13 yuan, up by 55.5 percent over the same period in 1984.

2. Reduced Household Administration Expenditures, Increased Household Consumption Expenditures

Cash expenditures for the 100 peasant families during the first half of 1985 averaged 211.23 yuan per capita, up by 15.1 percent over the same period in 1984. Of the various types of cash expenditures, per-capita household administration expenditures were down by 10.7 percent compared with the same period in 1984, while per-capita household consumption expenditures increased by 21.3 percent over the same period in 1984. Food expenditures as a proportion of total household consumption expenditures increased by 31 percent over the same period in 1984, housing expenditures increased by 88.1 percent and per-capita clothing expenditures remained the same as in 1984. The commodities purchased by the 100 peasant households included 8 bicycles, 15 watches, 5 televisions, 1 radio and 2 pieces of furniture costing more than 50 yuan. There was a substantial increase in purchases of all these items compared with the same period in 1984. Furthermore, the increased peasant incomes were used first of all to improve living conditions, with yearly increases in the amounts of foodstuffs and non-staple foodstuffs consumed. More than one-half the household consumption expenditures of the 100 peasant families went for food, with 66.8 percent of expenditures on foodstuffs going for non-staple foodstuffs. The substantial increase in the amounts of food products consumed suggests broad prospects for rural consumption markets.

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CSO: 4007/38

SICHUAN

SICHUAN PRODUCTS ENJOY FAME THROUGHOUT CHINA

Chengdu SICHUAN RIBAO in Chinese 24 Aug 85 p 1

[Article: "Our Provincial Commodity Exports Increase Yearly"]

[Text] What this newspaper reporter has learned is that since last year, Sichuan has sold more goods outside the province than purchased goods into the province, thereby reversing previous trends. Last year, the provincial goods which were exported amounted to 7.61 billion yuan, as compared to the goods brought into the province valued at 2.1 billion yuan. For the first half of this year, state-operated sales outlets and supply and marketing cooperative enterprises increased provincial export sales by 50.3 percent over the same period last year, whereas the purchase value of imported goods only increased 26.7 percent.

Since the 3d Plenum of the 11th CPC Central Committee, Sichuan has pursued development of commodity economy, expansion of the scope of market regulations, and strengthening of horizontal economic relations; provincial exports have increased progressively each year at an average of 22.1 percent since 1978. Last year, compared to 1978, this amounts to a 2.3-fold increase. For commodities brought into Sichuan, on the average, there has been only a 12.6-percent annual increase, only a 1.04-fold increase over 1978. In the buying and selling of goods, state-operated businesses and supply and marketing cooperative enterprises played a central role.

Local specialty agricultural by-products constituted a significant portion of the exported provincial goods. Last year, for provincial exports by state-operated enterprises, there were more than 4.54 million fattened pigs, 330 million jin of vegetable oil, more than 219,000 tons of wine, more than 1.35 million kg of tea and over 1.7 million kg of sun-cured tobacco. This year the situation is even better. In the first 6 months, state enterprises alone exported 200,000 more head of pigs than the same time last year. Wine exports increased more than 75,000 metric tons over the same period last year. Sun-cured tobacco and hemp likewise increased 8 percent and 48 percent, respectively, compared with the same period last year.

The situation for export of industrial goods is also very good. From January to June of this year, state-owned enterprises and factories exported 2.7-fold more chemical fiber cloth and over 4 times more silk and satin than were imported. Exported chemical fertilizers increased 25.8 percent. In addition, the export quantities of motorcycles, tractors, bricks, tiles and cement were substantial.

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CSO: 4007/457

ZHEJIANG

ZHEJIANG SERICULTURE IMPROVEMENT MEASURES SUMMARIZED

Hangzhou ZHEJIANG RIBAO in Chinese 24 Aug 85 p 2

[Article by Gao Sicai [7559 0138 1752] of Economic Crops Management Bureau of Provincial Agriculture Department: "How To Further Develop Zhejiang's Sericulture Production"]

[Text] Sericulture production is one of the important agricultural products of Zhejiang, and silk is the traditional export product. After implementation of the output-related system of contracted responsibilities in the rural areas, and especially after commodity production developed, silkworm raisers have recognized that cocoon production is of short cycle, instant results and high initiative. There were 802,500 dan of cocoons produced from spring and summer silkworms this year, an increase of 14.7 percent over that of the same period last year. Since autumn silkworm raising has considerably increased, it is predicted that cocoon production for this year will rise by a bigger margin. To further develop sericulture production, currently the following should be done:

1. Adhere to the Management System Restructuring To Increase Social and Economic Returns from Cocoons.

After abolishing the system of assigned procurement for cocoons, a lot of economic measures were not followed, as upper level management relinquished authority but lower levels did not, so basically the situation still remains that the supply and marketing sectors acts as agent for collecting, drying and transferring cocoons, while the industrial sector rations the cocoons to mills; there is only one purchase and marketing channel. In this situation, silkworm raisers are not able to have their products circulated, or their products processed or to gain extra profit from diversified management. Rural area silk mills which are located in the major silkworm raising areas still cannot get good cocoons produced by their own area. Therefore, enterprises such as the mulberry, silkworm and silk integrated enterprise of Chengtan Township in Xinchang County should be positively promoted to integrate the mulberry planting, silkworm raising, cocoon drying and silk reeling processes in order to limit links and increase economic returns from cocoons.

2. Restructure Cocoon Purchasing Standards and Implement the High Quality-Good Price System To Urge Silkworm Raisers to Upgrade Cocoon Quality.

The current cocoon purchasing criteria are based on pricing by dried cocoon weight, which cannot reveal the cocoon's real quality and or impel silkworm raisers to strive to improve cocoon quality. Therefore, some advanced equipment and technology which are beneficial for promoting quality cannot be popularized. The good quality-good price principle should be used to restructure the current cocoon purchasing standards, and gradually popularize pricing by reeled silk, implement the cocoon purchasing system based on the evaluation of silk product and silk length, which will impel silkworm raisers to improve equipment and technology and increase income.

3. Strengthen Mulberry Orchard Capital Construction to Increase Per-Mu Cocoon Productivity.

To raise silkworms, first mulberry must be planted. Currently, there are 1.29 million mu of mulberry orchards throughout Zhejiang, but with the development of rural commodity production and readjustment of the production structure, the mulberry orchard acreage close to suburban areas is gradually declining. The current mulberry orchard acreage in priority silkworm areas should be kept from declining, improvements on 60,000 mu of old mulberry orchards should be sped up and new mulberry orchards should be developed in favorable areas. This winter when improving and developing mulberry orchards, attention should be paid to improving the confused situation of mulberry breeds, and a grafting center for improved varieties should be built in priority sericulture areas for breeding and popularizing good mulberry seedlings. In addition, the planned management and economic system should be restructured to encourage silkworm breeding farms to cultivate new breeds which produce good quality and large quantities of silk and bring silkworm raisers a good income, to accelerate the breeding and popularization of improved varieties, and to improve mulberry orchards management to increase cocoon production per mu of mulberry orchard.

4. Set Up and Perfect Service Network for Good Service.

Because silkworm production and new mulberry orchards have increased and silkworm varieties and new sericulture areas have been enlarged this fall, a rural sericulture service network should be established and perfected to fully bring sericultural industrial cadres and technicians into play, to thoroughly coordinate agriculture, industry and commerce in order to upgrade the quality of service. The 3-call method implemented by the sericulture service station in Qingshi Township of Tongxian County should be popularized. That is: call to take orders and delivery; call to give technical instruction; and call to supply necessary material for silkworms and to supply pesticide by breaking up large quantities into small quantities.

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CSO: 4007/459

Genetics

CLONING PROMOTER CONTAINING DNA RESTRICTION FRAGMENT IN BACILLUS SUBTILIS

Beijing YICHUAN XUEBAO [ACTA GENETICA SINICA] in Chinese No 3, 1985 p 169

[English abstract of article by Guo Sandui [6753 0005 1018] and Jia Shifang [6328 1102 5364] of Institute of Microbiology, Academia Sinica]

[Text] Plasmid pPL603 (3.1 Md) containing a structure gene for chloramphenicol acetyltransferase (Cat). Cells harboring the plasmid cannot grow on solid media containing 10 Xg/ml of chloramphenicol, permitting the identification of restriction fragments that promote expression of the Cat gene.

Bacillus subtilis 168 chromosomal DNA and pPL603 DNA were digested with restriction endonuclease EcoRI and were ligated with T4 DNA ligase. B. subtilis BR151 competent cells were transformed by these recombinant plasmids. The transformants were selected on SBPY plates containing 10 Xg/ml of chloramphenicol. Forty-nine recombinant plasmids with molecular weights larger than pPL603 plasmid were found by rapid agarose gel electrophoresis. All these recombinant plasmids promoted the expression of the Cat gene. The different levels of chloramphenicol resistance of these recombinant plasmids were tested. The molecular weights of seven of these recombinants with higher levels of chloramphenicol acetyltransferase were further measured and properties of the recombinant plasmids analyzed.

CSO: 4011/9

Genetics

PREPARATION OF MONOCLONAL ANTIBODY AGAINST THE ISOLATE OF CUCUMBER MOSAIC VIRUS (CMV-Ca) AND ITS USE IN DIFFERENTIATION OF ISOLATES

Beijing YICHUAN [HEREDITAS] in Chinese No 4, Jul 85 p 8

[Article by Yu Shanqian [0060 0810 6197] et al, Department of Biology, Fudan University]

[Abstract] By employing the hybrid tumor technique, the authors used the polyethylene glycol (PEG, MW, 1,000) fusion method to fuse Sp2/o cells of small mouse bone marrow tumor with BALB/c small mouse lymph cells with immunity of an isolate CMV-Ca from cucumber mosaic virus. After sieving, the cell spore 3A2 of hybrid tumor was isolated with the chromosome number more than twice that of ordinary tumor cells. By inoculating the hybrid tumor into the abdominal cavity of the BALB/c small mouse, ascites were obtained. Through a determination of indirect enzyme immunity by the adsorption test (ELISA) method, the effective value of the monoclonal antibody is $1:2.5 \times 10^6$. The serological relationship was compared for four biologically different isolates CMV-Ca, CMB-P, CMV-37 and CMB-m cucumber mosaic virus with the above-mentioned monoclonal antibody.

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CSO: 4011/40

Genetics

IDENTIFICATION OF HBcAg GENE FRAGMENTS BY SOUTHERN BLOT HYBRIDIZATION

Beijing YICHUAN [HEREDITAS] in Chinese No 4, Jul 85 p 22-24

[Article by Ding Guangzhi [0002 1684 3112] et al of the Institute of Basic Medicine, Military Academy of Medical Sciences, Beijing]

[Abstract] Hepatitis B is a communicable disease caused by a DNA virus. In recent years, many sensitive serum immunological diagnostic methods were applied for hepatitis B, whose diagnosis requires hepatitis B core antigen (HBcAg) extracted from patients' serum or cadaver liver. The HBcAg thus obtained is limited in quantity; therefore, substitutes are obtained abroad via genetic engineering with synthesis from ESCHERICHIA COLI. The paper reports on the authors' successful application of this synthesis. In order to obtain DNA fragments containing HBcAg genes from cloning mycorrhiza, the authors applied the gap translation method by processing the known HBc(adw) gene fragments into a probe with [³²P] isotope marking. In addition, the Southern blot filter diaphragm hybridization method was used for hybridization with five cloning DNA enzyme slice fragments, thus finding the DNA fragments of suitable length containing HBcAg genes. Four figures show enzyme cut diagrams of HBV(adw) gene constitution and pCP10, as well as four cloning DNA and pMM210 enzyme cut electrophoresis spectra and hybrid (with two probes) radiation photographs.

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Genetics

PROCEDURE FOR ENRICHING DERIVATIVE PLASMID DNA

Beijing YICHIAN [HEREDITAS] in Chinese No 4, Jul 85 pp 25-26

[Article by Li Yuyang [2621 5148 7122] and Zhao Jiagang [6392 1367 0474] of the Institute of Genetics, Fudan University]

[Abstract] In the carrier constitution process of genetic engineering, there is often the operation of removing some redundant restriction enzyme cleavage sites. If one or two same-variety enzyme cleavage sites are to be removed, generally the following process is followed: by isolating a part of the DNA fragments following an enzyme cut on a DNA specimen, the DNA polymerized enzyme I Klenow fragments are used to fill the adhesive terminal of the cleavage site. Then T4 connective enzyme is used for a ring-shaped connection. Finally, inversion is applied for DNA analysis of inverter microsomes, thus selecting such microsomes with the elimination of one cleavage site. When constituting yeast ESCHERICHIA COLI shuttling microsomes, the authors first obtained a microsome YFD7, which has two Hind III cleavage sites. In the next step, the authors used the HIND III cleavage site for insertion into a fragment with initiators. Hence, one Hind III cleavage site should be removed from YFD7. The entire experiment is divided into nine steps as presented by the paper. One figure shows the electrophoresis spectrum of a DNA Hind III enzyme cut of an inverter microsome.

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CSO: 4011/40

Genetics.

ISOLATION OF Viable EMBRYO SACS AND THEIR PROTOPLASTS OF Nicotiana tabacum

Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 4, 1985 pp 337-344

[English abstract of article by Hu Shiyi [5170 6624 1355], Li Legong [2621 2867 1562], and Zhu Cheng [2612 3413] of Beijing University, Department of Biology]

[Text] Isolation of fixed and fresh embryo sacs has been reported. However, the isolation of protoplasts of embryo sac elements is reported here for the first time. The protoplasts of eggcells, synergids, central cells and antipodal cells have been isolated with retention of their viability. Though this is preliminary work, it indicates the potential of isolation of naked female gametes of angiosperms, which may be use in genetic manipulation and plant biotechnology.

Nicotiana tabacum was grown in the greenhouse of the Department of Biology, Beijing University. Ovaries from opened and unpollinated flowers were removed and sterilized with 70-percent alcohol. The ovules were dissected from the ovaries and placed in incubation (4 to 8 hours at 28 degrees Celsius) in an enzyme solution containing 2 percent driselase, 0.65 M mannitol and 0.25 percent potassium dextran sulfate. Ovules from three to four ovaries could be incubated with 1 ml of enzyme solution in a 3-cm petri dish. All these manipulations and the following procedures were performed under sterile conditions. After incubation, ovules were washed three times with a washing solution of 0.65 M mannitol. The isolated embryo sacs and their protoplasts were obtained by gently squashing digested ovules in a small volume of washing solution on a slide.

After the fresh ovules were incubated for 3 to 3.5 hours in the enzyme solution, the embryo sacs were successfully isolated in an intact manner, both for mature and immature embryo sacs. The isolated embryo sac looked plump, viable and very distinct in its structure. If the isolated embryo sacs were incubated in 0.01 percent fluorescein diacetate (FDA) used as a test for the viability of the embryo sac, and observed under fluorescein microscope, the cytoplasm of all embryo sac elements, including egg cells, synergids, central cells and antipodal cells, showed strong fluorescence. It was demonstrated that these isolated embryo sacs are still viable.

When the incubation of ovules was prolonged up to 8 hours in certain cases, the boundary wall of the embryo sac was partially digested and the protoplasts of embryo sac elements came out from the micropylar or chalazal end after squashing. The difference in the protoplasts deriving from different embryo sac elements could be recognized by their relative size and other characteristics. The egg protoplast was smaller than that of the synergid. However, the protoplasts of antipodal cells were obviously smaller than that of the egg. But the central cell protoplast was the largest among these protoplasts and possessed two polar nuclei and a very large central vacuole. All these isolated protoplasts of embryo sac elements were also proven viable with the FDA method.

The importance of isolated protoplasts of embryo sac elements is discussed with respect to genetic manipulation.

KEY WORDS: Isolation of embryo sac; Isolation of embryo sac elements; Protoplast.

CSO: 4011/38

Plant Disease

STUDIES ON RICE SHEATH ROT DISEASE (II): ON THE PHYSIOLOGY OF THE PATHOGEN
SAROCLADIUM ORYZAE (SAWADA) GAMS AND HAWKSWORTH

Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 2,
Jun 85 p 86

[English abstract of article by Zhuge Genzhang (K. C. Chuke) [6175 5514 2704
2874] of Zhejiang Academy of Agricultural Sciences, and D. P. Lapis of the
Agricultural College of Philippine University]

[Text] The studies revealed that the temperatures for the growth and development of the pathogen were 15 to 35 degrees Celsius, the optimum being 30 degrees. The pH values of the substrates were relatively broader, from pH 3 to pH 9, the optimum being pH 5.5 for mycelial growth and sporulation. Continuous light treatments inhibited, while complete darkness favored, growth and sporulation. The fungus grew and sporulated better in sucrose and glucose followed by soluble starch as the carbon sources. It utilized effectively all the nitrogen sources tested. The best medium for the fungus was PDA.

Extracts of flag leaf sheath and young panicle of rice plant stimulated spore germination.

CSO: 4011/41

Plant Disease

**PRELIMINARY STUDY ON PREDICTING DISTANCE OF DISEASE SPREAD BASED UPON THE
INFECTION GRADIENT MODEL**

Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 2,
Jun 85 p 102

[English abstract of article by Zeng (Tseng) Shimai [2582 1102 6701] of
Beijing Agricultural University, Department of Plant Protection]

[Text] In air-borne diseases, such as wheat stripe rust, distance of disease spread brought about by one cycle of infection can be predicted by using the infection gradient model $X_i = a(d_i^{-b})$, provided that X, the total amount of disease resulting from the infection, and b, the gradient coefficient, can be predicted; thereafter a can be estimated. Three approaches to the prediction were designed and tested with observed values of disease spread. Among the three, the "center square" approach seems to be the most hopeful. Further verification and validation are needed.

CSO: 4011/41

Plant Disease

ON THE CAUSAL ORGANISM OF ROOT AND BASAL STALK ROT OF CORN IN SHANDONG PROVINCE

Tianjin ZHIWU BINGLI XUEBAO [ACTA PHYTOPATHOLOGICA SINICA] in Chinese No 2, Jun 85 p 108

[English abstract of article by Xu Zuotong [1776 0155 3806] and Zhang Chuanmu [1728 0278 2875] of the Institute of Plant Protection, Shandong Academy of Agricultural Sciences]

[Text] The root and basal stalk rot of corn is one of the most serious diseases of corn in China in recent years. From 1979 to 1983, 252 disease samples were collected from several areas in Shandong Province. Results of isolation and inoculation tests in the laboratory and the field proved that the main pathogenic fungi are Pythium aphanidermatum (Edson) Fitzp. and Fusarium graminearum Schw., but the pathogenicity of the former is stronger.

CSO: 4011/41

Plant Disease

MEASUREMENT REPORTING TECHNIQUE AND INDEXES OF PREVENTION AND TREATMENT OF RICE STRIPE WITHERING DISEASE

Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 4, 8 Aug 85, pp 2-4

[Article by Zhu Mujun [2612 4209 6874 of the Pest Measurement Reporting Station, Jinhua County, Zhejiang Province]

[Abstract] On increasing the fertilizer application level and coverage of close planting in recent years, the outbreak areas of rice strip withering disease has been expanding incessantly with high crop losses. The pest measurement reporting station began in 1977 to explore the outbreak pattern and degree of damage inflicted by this disease. The results are divided into the two aspects of measurement reporting and prevention-treatment index as reported in this article. Humidity plays a major role on the development of the disease progress while temperature determines the outbreak time. Infection with the disease depends mainly upon sericolous mycelia of the pathogen since high humidity is obligatory for the growth of and attack by the mycelia. When the rice plants are close to each other, humidity among plants is much higher than for the atmosphere in general. From data analysis of the measurements, the correlations coefficients of temperature and humidity in June to July in the current year (affecting the disease outbreak rate) are 0.9645 and 90 percent; these figures are in the range of high significance. The article suggests using the average temperature in October through December of the previous year as a factor for predicting the degree of outbreak of the stripe withering disease, and goes on to present a data compilation and computation for establishing predictive formulas of the extent of a disease outbreak. The author states that early prevention and treatment should be performed in the year of the early disease outbreak with severity, later for late outbreak year with mild disease. A regression-type equation can be used to predict the degree of disease outbreak in the current year when determining prevention and treatment schedules by referring to the prevention-treatment index. Three tables list data on the conversion of the extent of a disease outbreak, correlation analysis for October through December (of the previous year), average temperature and the disease outbreak, and correlations on the disease loss rates by different factors.

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CSO: 4011/6

Plant Disease

OUTBREAK, PREVENTION-TREATMENT OF SOYBEAN FLOWER, LEAF DISEASE

Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 4, 8 Aug 85 pp 18-20

[Article by Dong Ping [5516 1627] et al, Department of Agriculture, Shihezi Agricultural College, Xinjiang

[Abstract] In Xinjiang, the outbreak of soybean flower and leaf disease is widespread and serious. Generally, the disease outbreak rate is 40 to 100 percent in almost all of Xinjiang's major soybean producing areas. The virus mainly responsible for causing the disease is SMV. The article presents a 1983-1984 study of the subject matter. The major symptom types are herpes and yellow spots on soybean flowers and leaves. The disease can be infected by rubbing, seeds and aphids. From May through July (especially after mid-June), temperature and rainfall play a major role on aphids migration, thus affecting the disease outbreak and epidemicity; a severe outbreak occurs for high temperature and low rainfall while a light outbreak for low temperature and high rainfall. Laying silver-gray thin plastic film mulching on soybean fields plays a significant role in disease prevention and treatment with an 80.7-percent-lower disease infection rate because aphids can be prevented from reaching the soybean plants. Early sowing and specific disease-resistant varieties of soybean seeds can reduce the infection rates. Three tables list data of virus-carrying seeds, results in disease prevention and crop yield gains by laying plastic film mulching, and the disease outbreak situation for different sowing periods. A table shows correlative curves of aphids migration and disease outbreak.

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Plant Disease

RICE TASSEL BLAST PREVENTION BY USING GONGNONG TYPE 16 SPRAYER

Tianjin ZHIWU BAOHU [PLANT PROTECTION] in Chinese No 4, 8 Aug 85 pp 48-49

[Article by Zhang Yuefei [1728 6460 7378] et al, Plant Protection Station, Huizhou Prefecture, Anhui Province

[Abstract] The Gongnong type 16 sprayer includes a back pack containing a chemical solution for spraying 1 mu of paddy (and other) field against multiple pests with preventive effect as good as that in conventional spraying. The article reports on tests on the prevention and treatment of rice tassel blast in 1984. These tests are only for leaf diseases of the rice plant; further tests are needed for diseases at plant bases, such as the stripe withering disease. Three different concentrations of the solution were tested at different rates of walking. An average of 35 minutes is required to spray 1 mu of paddy filed with the subject sprayer, saving about 50 percent of spraying time compared with conventional spraying. Two tables list data of a comparison as to the deviation significance of rice tassel blast prevention and treatment with different sprayer capacities, and a comparison of times required for different amounts of spraying.

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Soil Science

PHOSPHORUS FERTILIZER PRODUCTION APPLICATION COUNTERMEASURES (I)

Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 3, 6 Jun 85
pp 97-103

[Article by Shen Shanmin [3088 0810 2404], Institute of Forestry and Pedology,
Chinese Academy of Sciences]

[Abstract] This is the first installment of a two-part series on the title subject. The article attempts to apply results of the progress of the past 20-odd years of phosphorus fertilizer study to discuss China's phosphorus fertilizer production and application measures with an analysis of the current phosphorus status in the Chinese agro-system. There have been two different routes of chemical fertilizer application by China and Western developed countries. With the tradition of organic manure as the foundation of China's agriculture, nitrogen fertilizer must be the primary factor in agricultural development with a significant effect on crop yield gains. In the West, the tradition was biological fixation as the main nitrogen source. With the advent of intensive farming, phosphorus fertilizer is always the first factor to be satisfied. Two different routes of development and application of chemical fertilizer in China and in the West lead to two different conditions: China's soils have been gradually depleted of phosphorus while in the West a vast reserve of effective phosphorus exists in the soil. Therefore, China's phosphorus fertilizer production and application countermeasures should aim to gradually build up phosphorus in soil for balanced nutrient inputs.

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Soil Science

PHOSPHORUS FERTILIZER PRODUCTION, APPLICATION COUNTERMEASURES (II)

Shenyang TURANG TONGBAO [JOURNAL OF SOIL SCIENCE] in Chinese No 4, 6 Aug 85
pp 145-151

[Article by Shen Shanmin [3088 0810 2404], Institute of Forestry and Pedology,
Chinese Academy of Sciences]

[Abstract] This is the second installment of the two-part series on the title subject. Four countermeasures of phosphorus application are elaborated: (1) Maintain traditional structure of nutrient circulation in China's agriculture to maximize the utilization of every scrap of phosphorus nutrient applied to soil. (2) Restore and expand the effective phosphorus store in soil with compensatory application of a drastically increasing amount of phosphorus fertilizer. (3) Use low-priced phosphate powder as much as possible. (4) Import large amounts of phosphorus fertilizer or its raw materials. In these two installments, three figures show the residual effect of one phosphorus fertilizer (pf) application and its cumulative effect over a number of years in successive applications, variation in the estimated content of fast effective phosphorus in soil over a 30-year period, and the residual effect of a single phosphorus application as well as phosphorus supply levels and its utilization rates for 80-percent phosphorus returning to soil for circulation. Twelve tables in the two installments list data on the residual effects of a single pf application, comparison of the fertilizer effect of the residue and the new application, current-season manifested utilization rate of pf for several years of successive applications, residual and cumulative effects following a single pf application, manifested utilization rates of pf application and equivalent weights of new pf applications over a number of years, content variations of soil activated phosphorus and fast effective phosphorus for long-term application and suspension of pf for several decades, phosphorus content in China's crops and phosphorus equilibrium in the agro-system, equilibrium estimates of the effective phosphorus store in farm soil, variations in the phosphorus supply structure in China's agriculture, and utilization rates of the open system and the 0.8 circulation closed system for a single phosphorus application.

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Veterinary Medicine

PATHOLOGICAL STUDY OF ARTIFICIAL INOCULATION OF VIRULENT TOXIN OF HOG CHOLERA

Lanzhou ZHONGGUO SHOUTI KEJI [CHINESE JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 9, 20 Sep 85 pp 12-14

[Article by Sang Yuzhou [2718 7183 0719] Department of Food, Hangzhou Commercial College; Ye Junhua [5509 6511 5478] Sanitation and Quarantine Staion, Xijiao Ward, Tianjin Municipality; and Sun Biancheng [1327 6708 2052] Sanitation and Quarantine Station, Chagnsha Municipality

[Abstract] In China and abroad, studies have been carried out on the pathological variation and disease regime of hog cholera. In the authors' work in recent years, it was discovered that the pathological variations of hog cholera are numerous, quite different from those recorded in medical papers. This paper presents a systematic pathological anatomy and histopathological examination with the recording of pathological variation features, exploring the outbreak regime on 35 hogs with artificial inoculation of Shimen System hog cholera virulent toxin; all hogs died after outbreak of the cholera. The anatomical examinations include the immunogenic organs (lymph nodes, spleen and tonsils), digestive system, organon uropoeticum, heart, central nervous system, respiratory system and hog skin tests. The histopathological variations include those of blood vessels, lymph organs, pancreas, kidneys, digestive tract, heart and the central nervous system. A very valuable finding of this study is that the outbreak of necrosis is 65 percent among pancreatic hemorrhaging of hog cholera cases. This discovery is helpful to explain the principle of the starch pancreatin test (or referred to iodine reduction test) in diagnosis of hog cholera. The test materials were provided by the Institute of Animal Husbandry of the Zhejiang Provincial Academy of Agricultural Sciences, Provincial Department of Agriculture, and Hog Cholera Immunination Procedure Study Section of the Shaoxing County Agricultural Bureau. Also taking part in the study work were Sheng Zutian [4141 4371 1815], Wang shuihua [3769 3055 5478], Wang Yicheng [3769 0001 2052] and Zhou Zhaoyin [0719 0340 1377] of the Institute of Animal Husbandry of the Zhejiang Provincial Department of Agriculture; and Song Miaoquan [1345 8693 3123] and Yang Suzhen [2799 4790 3791] of Shaoxing County Agricultural Bureau. Professor Zhang Jinghang [1728 0311 5887] of Department of Food, Hangzhou Commercial College supported and guided the study. The authors are grateful to the above-mentioned persons and organizations.

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Veterinary Medicine

CLINICAL APPLICATIONS OF UNIQUE ELECTROMAGNETIC WAVE IN VETERINARY MEDICINE

Lanzhou ZHONGGUO SHOUYI KEJI [CHINESE JOURNAL OF VETERINARY SCIENCE AND TECHNOLOGY] in Chinese No 9, 20 Sep 85 pp 33-34

[Article by Liu Bingui [0491 6670 5281], Institute of Military Medicine, Department of Logistics, Lanzhou Military Region

[Abstract] The unique electromagnetic spectrum therapy device (TDP) was developed by Gu Wenbin [5384 2429 1755] in 1982. TDP has been widely applied in veterinary clinical practice with high efficacy for certain diseases. Since Li Daoxing's [2621 6670 5281] article, "Efficacy Observation of Bovine Mammitis Treated with TDP," was printed in ZHONGGUO SHOUYI ZAZHI [CHINA VETERINARY JOURNAL] No 10, 1983, more than 10 veterinary and animal husbandry teaching and science research units throughout China have conducted follow-up studies and applications. This article presents a general review of TDP clinical applications. Among diseases treated by TDP are indigestion in horses and mules, spasm-hernias, trachitis, crawl-on-nest sickness, rheumatism, dysentery of piglets, injuries, burns, arthritis, fractures, paralysis, hoof disease, conjunctivitis, fowl diarrhea, mammitis and sterility. TDP is used for spot or local illumination with 200 to 250 W or power, wavelength spectrum 0.55 to 25 μ m, illumination distance 20 to 30 cm, surface temperature $38+2^{\circ}\text{C}$, preheating for 5 min, and illumination time 20 to 60 min once or twice daily for 1 to 15 days in succession. The use of TDP can raise the pain threshold and affect the hemograms of horses.

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